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APPENDIX TO THE JOURNALS
OF THE
SENATE AND ASSEMBLY
OF THE
TWENTY-THIRD SESSION
OF THE
LEGISLATURE OF THE STATE OF CALIFORNIA.

Volume II.



SACRAMENTO:
STATE OFFICE : : : F. P. THOMPSON, SUPT. STATE PRINTING.
1879.

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FIRST ANNUAL REPORT

OF THE

BOARD OF BANK COMMISSIONERS

OF THE

STATE OF CALIFORNIA.

TO HIS EXCELLENCY THE GOVERNOR.

JUNE 30th, 1879.



SACRAMENTO:

STATE OFFICE : : : F. P. THOMPSON, SUPT. STATE PRINTING.

1879.

OFFICE OF THE BOARD OF BANK COMMISSIONERS, }
OF THE STATE OF CALIFORNIA, }
SAN FRANCISCO, June 30th, 1879. }

To His Excellency William Irwin, Governor of the State of California :

The undersigned, the Board of Bank Commissioners, have the honor to present for your consideration their first annual report, including statements of the condition of each incorporated banking institution at the close of business on the 30th of June and 31st of December, 1878; also statements of the condition of each when examined by the Commissioners, and such statistical and other information "as, in their judgment, may be of interest to the public."

Very respectfully, your obedient servants,

EVAN J. COLEMAN,
ROBERT WATT,
JAMES T. MURPHY,
Commissioners.

NOTE.

In this report the banks have been classified as *savings banks* or as *commercial banks*, according to the law under which they were incorporated.

It will be observed that the name of a bank does not always indicate the class to which it belongs. For instance these are really commercial banks, and not savings institutions, to wit:

Petaluma Savings Bank;

Farmers' Savings Bank (Lakeport);

Savings Bank of Santa Rosa.

The following are savings banks, although their names do not indicate that fact, to wit:

Bank of Mendocino;

Los Angeles County Bank.

The Sacramento Bank is incorporated under the general banking laws and is therefore classed as a commercial bank, but it does a purely savings business.

REPORT.

STATE OF CALIFORNIA,
OFFICE OF THE BOARD OF BANK COMMISSIONERS, }
SAN FRANCISCO, June 30th, 1879. }

The passage by the last Legislature of "an Act creating a Board of Bank Commissioners, and prescribing their duties and powers," was an important event in the banking history of this State. This Act went into effect, and the present Commissioners were appointed by the Governor on the 16th of May, 1878. Before entering upon the discharge of our duties, we deemed it advisable to obtain from the Attorney-General a written opinion as to the general scope of the new law, and our powers and duties thereunder. He replied promptly, and to the following effect:

OFFICE OF THE ATTORNEY-GENERAL OF THE STATE OF CALIFORNIA, }
SACRAMENTO, May 25th, 1878. }

To the Honorable Board of Bank Commissioners:

I have had under consideration the inquiry submitted to me concerning your powers and duties as Bank Commissioners under the provisions of an Act entitled "an Act creating a Board of Bank Commissioners, and prescribing their duties and powers," approved March 30th, 1878, and reply thereto as follows:

First—As to national banks:

I am of opinion that the powers and duties imposed upon your Honorable Board, by the Act, do not include national banks. The 5,240th section of the revised statutes (Federal) provides that the Comptroller of the Currency, with the approval of the Secretary of the Treasury, shall, as often as necessary, appoint a suitable person to make examinations and report, etc., etc., upon the condition of the national banks. Section 5,242 reads as follows: "No association shall be subject to any visitatorial powers other than such as are authorized under this title, or are vested in the Courts of Justice."

From these statutes it will be seen that Congress, *ex industria*, excludes national banks from the visitatorial or inquisitorial examination from any other source, or by any other means, than those by it, in the Act referred to, provided. I therefore conclude that such being the case, they are not intended to be included in your labors.

Second—Are private banks, or persons engaged in private banking, subject to the provisions of the Act under which you are appointed?

So far as the issuing of license, and the exercise of coercive or compulsory powers conferred upon your Honorable Board by the Act, they are not. The Act seems to contemplate, and to confer upon you as a Board, the power of issuing license or of resorting to compulsory process towards banking corporations only. I find the Act somewhat vague and unsatisfactory upon this proposition, but gather this to be its meaning from its whole scope and purport. While this is the case, I respectfully call your attention to the language of Section 4 of the Act (part only of which I here quote), which in my opinion also requires that in the discharge of your duties under this Act you are not to leave out of your examination private banks or private persons engaged in banking. By this section it is made your duty to visit and make examination of each "bank," etc., etc., * * * "or any trust company receiving any valuable thing in trust, or money on special deposit, or any person publicly receiving money on deposit for safe keeping," etc., etc. Again, referring your Honorable Board to the several duties assigned you under the provisions of Section 8 of this Act, you are required to report certain matters to the Attorney-General, and you are also to report to the Governor of this State a tabular statement "and synopsis of the several reports which have been filed in your office since your last report," etc., etc., "and such other matters as in your opinion may be important to the public," etc., etc.

Taking the provisions of those two sections, together with the general provisions of the Act, I am of opinion that it is also your duty to visit, and when permitted to do so, to make the same examinations and report upon the condition of private banks, and of persons engaged in

publicly receiving money on deposit for safe keeping, as you are required to do with public banking incorporations. This, I say, is one of the duties imposed upon you by the Act. I can find, however, in the Act no power on your part to compel private persons, not public or corporations, to accede to your demand when so made. I therefore conclude, and so advise, that if upon your visit and demand to examine and report the condition of any such private banking business as I have here named, your demand should be refused, I think then that it would be your duty to report such fact of demand and refusal, stating the facts, reasons, etc., under the head of "such other matters as in your opinion may be of interest to the public." The refusal of any banking establishment might or might not be significant of its true financial condition. If it were good, it would doubtless be willing to leave to the world the guarantee of your Honorable Board; if bad, it certainly would not endeavor to court inquiry. At any rate I conclude that you are required to examine and report upon such private banks as permit such examinations, and to report upon such as refuse.

Third—Section 16 of the Act provides that "to meet the annual expenses provided for by this Act, the Bank Commissioners shall receive, in advance, in gold coin from each savings bank, bank, or banking corporation, its pro rata," etc. I conclude that from the language of this section, and also from the other portions of this Act, that this pro rata assessment is not intended to be imposed upon private banks, or persons engaged in private banking, but as to them your duties are purely visitatorial and inquisitorial, so far as I have already intimated. I regret that a press of business and the short time permitted me to examine the question fixes me to this hasty reply. I shall be pleased at all times to confer with your Honorable Board, or either of the Commissioners, either personally or by letter, as to any questions which may arise in the discharge of the responsible duties imposed upon you.

I am, very truly and respectfully, your obedient servant,

JO HAMILTON, Attorney-General.

In accordance with the foregoing opinion we did not include any national or unincorporated bank in the assessment for licenses. The assessment for the first year's licenses was based upon the amount due depositors on the 31st of December, 1877, as required by Section 16 of the Act, part of which reads: "But in estimating the amount to be paid by each savings bank, bank, or banking corporation, on applying for its first license under this Act, the amount as shown by its last semi-annual statement, published for the information of its depositors, shall be taken as the amount on deposit with it."

Until the Bank Commissioners' Act went into effect no official source of information concerning the condition of the banks of this State existed. Much time was therefore consumed in obtaining the necessary information as to the amount on deposit with each bank at the time specified. A tabular statement in the Evening Bulletin of February 22d, 1878, compiled from the "last semi-annual statements" of the banks, "published for the information of depositors," and showing their assets and liabilities on the 31st of December, 1877, was of great assistance to us, and served in a measure as a basis for the assessment. The amount specified under the Act for the first year's expenses of the Commission was \$13,900, divided as follows:

For salary of three Commissioners	\$9,000 00
For salary of one Clerk	1,800 00
For traveling expenses of three Commissioners	1,500 00
For rent of office	900 00
For furniture of office	500 00
For stationery, fuel, postage, etc.	200 00
Total	\$13,900 00

To raise this amount the rate of assessment was fixed at 14½ cents on each one thousand dollars of deposits. The following tables contain the names of the banks and savings banks, arranged alphabetically, with the amount due depositors on the 31st of December, 1877, and the amount paid by each bank for its license in July, 1878:

TABLE NO. 1—SAVINGS BANKS.

Name of Savings Bank.	Due Depositors December 31, 1877.	Amount Paid for License.
1. California Savings and Loan Society, San Francisco-----	\$394,700 00	\$56 25
2. Capital Savings Bank, Sacramento-----	3,344,900 00	476 65
3. Commercial and Savings Bank of San José-----	802,700 00	114 40
4. Farmers' and Mechanics' Savings Bank, San Francisco-----	482,400 00	68 75
5. Farmers' Savings Bank of Stanislaus County-----	109,400 00	15 60
6. Franco-American Savings Bank, San Francisco-----	65,500 00	9 35
7. French Savings and Loan Society, San Francisco-----	5,920,900 00	843 70
8. German Savings and Loan Society, San Francisco-----	8,864,000 00	1,263 10
9. Hibernia Savings and Loan Society, San Francisco-----	14,509,600 00	2,067 60
10. Humboldt Savings and Loan Society, San Francisco-----	1,107,500 00	157 80
11. Los Angeles County Bank-----	225,800 00	32 20
12. Marysville Savings Bank-----	1,158,100 00	162 20
13. Masonic Savings and Loan Bank, San Francisco-----	1,368,400 00	195 00
14. Mendocino, Bank of-----	241,100 00	34 35
15. Merced Security Savings Bank-----	134,000 00	19 10
16. Napa Valley Savings and Loan Society-----	411,900 00	58 70
17. Oakland Bank of Savings-----	1,471,100 00	209 60
18. Odd Fellows' Savings Bank, San Francisco-----	5,645,900 00	804 55
19. Odd Fellows' Savings and Commercial Bank, Sacramento-----	853,900 00	121 70
20. Sacramento Savings Bank-----	2,442,200 00	348 00
21. Santa Cruz Bank of Savings and Loan-----	319,500 00	45 50
22. San Francisco Savings Union-----	8,544,700 00	1,217 60
23. San José Savings Bank-----	737,000 00	105 00
24. Savings and Loan Society, San Francisco-----	11,595,000 00	1,652 30
25. Security Savings Bank, San Francisco-----	2,132,700 00	303 90
26. Stockton Savings and Loan Society-----	1,038,700 00	148 00
27. Union Savings Bank, Oakland-----	1,397,500 00	199 15
28. Vallejo Savings and Commercial Bank-----	42,600 00	6 50
Totals-----	\$75,341,700 00	\$10,736 55

TABLE NO. 2—COMMERCIAL BANKS.

Name of Bank.	Due depositors December 31, 1877.	Amount paid for license.
1. Anaheim, Bank of-----	\$38,200 00	\$5 45
2. Butte County, Bank of-----	231,000 00	32 90
3. California, Bank of-----	4,075,500 00	580 75
4. Chico, Bank of-----	329,900 00	47 00
5. Citizens' Bank, Nevada City-----	36,400 00	5 20
6. Colusa County Bank-----	306,400 00	43 65
7. Commercial Bank of San Diego-----	188,900 00	26 90
8. Commercial Bank of Los Angeles-----	183,000 00	26 10
9. Dixon, Bank of-----	149,200 00	21 25
10. Farmers' Savings Bank, Lakeport-----	103,100 00	14 70
11. Farmers' and Merchants' Bank of Los Angeles-----	404,100 00	57 60
12. Farmers' and Mechanics' Bank, Healdsburg-----	54,000 00	7 70
13. Fresno, Bank of-----	20,200 00	2 90
14. Gilroy, Bank of-----	54,700 00	7 80
15. Grangers' Bank of California-----	184,800 00	26 35
16. Healdsburg, Bank of-----	46,200 00	6 60
17. Hollister, Bank of-----	125,900 00	17 95
18. Humboldt County Bank-----	81,800 00	11 65
19. Kern Valley Bank-----	36,400 00	5 20
20. Lake, Bank of-----	40,100 00	5 70
21. La Porte, Bank of-----	25,500 00	3 60
22. Martinez, Bank of-----	117,200 00	16 70
23. Merced Bank-----	37,900 00	5 40
24. Napa, Bank of-----	162,700 00	23 20
Amount carried forward-----	\$7,033,100 00	\$1,002 25

TABLE No. 2—Continued.

Name of Bank.	Due Depositors December 31, 1877.	Amount Paid for License.
Amount brought forward	\$7,033,100 00	\$1,002 25
25. Nevada Bank of San Francisco	5,770,100 00	822 25
26. Pacific Bank	771,200 00	109 90
27. Petaluma Savings Bank	175,900 00	25 05
28. Sacramento Bank	1,008,400 00	143 70
29. Salinas City Bank	109,000 00	15 50
30. Santa Barbara County Bank	111,200 00	15 85
31. Santa Clara County Bank	83,800 00	11 95
32. Santa Cruz County, Bank of	92,900 00	13 25
33. San Diego, Bank of	47,900 00	6 80
34. San Joaquin Valley Bank	137,900 00	19 65
35. San José, Bank of	559,900 00	79 80
36. San Luis Obispo, Bank of	65,600 00	9 35
37. Santa Rosa Bank	263,300 00	37 50
38. Savings Bank of Santa Rosa	119,300 00	17 00
39. Sonoma County Bank	197,600 00	28 15
40. Sonoma Valley Bank	29,900 00	4 25
41. Stockton, Bank of	78,100 00	11 10
42. Suisun, Bank of	150,100 00	21 40
43. Tehama County, Bank of	155,200 00	22 15
44. Tonales, Bank of	44,600 00	6 35
45. Ukiah, Bank of	96,400 00	13 75
46. Vallejo, Bank of	33,200 00	4 75
47. Ventura, Bank of	88,300 00	12 60
48. Visalia, Bank of	105,800 00	15 10
49. Watsonville, Bank of	104,100 00	14 85
50. Wells, Fargo & Company's Bank	743,200 00	105 90
51. Woodland, Bank of	219,900 00	31 35
52. Bank of Commerce	14,000 00	2 00
Totals	\$18,409,900 00	\$2,623 50
53. Anglo-Californian Bank (limited), S. F. Branch*	1,450,700 00	206 70
54. British Columbia, Bank of, S. F. Branch*	160,000 00	22 80
55. British North America, Bank of, S. F. Branch*	560,200 00	65 60
56. London and San Francisco Bank (limited), S. F. Branch*	1,887,000 00	268 90
Grand totals	\$22,367,800 00	\$3,187 50

* These Branches of foreign banks are only assessed on the amount due depositors at San Francisco.

It will be seen from the foregoing tables that eighty-four banks in all (twenty-eight savings and fifty-six commercial) took out licenses for one year from July, 1878. The aggregate amount of deposits and assessment is shown in the following:

COMPARATIVE SUMMARY.

	Deposits December 31, 1877.	Assessment.
28 savings banks	\$75,341,700 00	\$10,736 55
52 commercial banks	18,409,900 00	2,623 50
4 foreign banks at San Francisco	3,957,900 00	564 00
84 banks	\$97,709,500 00	\$13,924 05

The Bank of Commerce (incorporated with a capital stock of \$1,000,000), doing business at San Francisco, applied for and received a license, as appears in Table No. 2, but on the 30th of July, the last

day under the Act for sending in its semi-annual report, the President of the bank notified us that its business was too small to report, and that a meeting of the stockholders had been called for the purpose of disincorporating, and doing business, thereafter, as private bankers. We ordered its license returned, and required notice of the change to be published.

The Mendocino Discount Bank does not appear in the assessment list, as its deposits, on the 31st of December, 1877, only amounted to a few hundreds of dollars, but it sent in a semi-annual report in July and that makes the number of banks which reported their condition on the 30th of June, 1878, agree with the number taking out licenses, namely, twenty-eight savings banks and fifty-six commercial (fifty-two home and four foreign) banks.

FIRST REPORTS.

As was to be expected, the first semi-annual reports received by us, showing the financial condition of the banks on the 30th of June, 1878, were incomplete in many particulars and incorrect in others, although the blanks furnished by us were prepared with printed headings to facilitate a compliance with the requirements of Section 9 of the Act. The Commissioners were employed several weeks in examining these reports and sending them back for correction. The errors consisted in many cases of omissions (often, no doubt, intentional) to give the details required by the Act; but, more often, arose from these details being placed under wrong headings. The following table gives a summary of these reports after correction: (For details see appendix.)

TABLE No. 3.

Aggregate Statement of the Banks and Savings Banks on the 30th of June, 1878.

	Twenty-eight Savings Banks.	Fifty-two Com- mercial Banks.	Four Branches of Foreign Banks.	Grand Total of Eighty-four Banks.
<i>Resources.</i>				
Bank lots and buildings	\$877,222 21	\$2,077,966 01	\$70,465 86	\$3,025,654 08
Real estate by foreclosure	3,947,155 40	834,850 59	43,969 19	4,825,975 18
Loans on real estate	59,132,312 21	7,402,889 46	658,490 07	67,193,691 74
Invested in stocks and bonds	3,274,398 86	3,100,777 36	67,096 52	6,442,272 74
Loans on stocks and bonds	4,118,997 23	9,463,896 01	1,807,174 08	15,390,067 32
Loans on other securities	1,177,894 34	580,068 97	964,999 36	2,722,962 67
Loans on personal security	2,297,486 05	12,794,466 34	5,719,160 85	20,811,113 24
Money on hand	3,764,350 03	8,046,759 29	2,980,108 03	14,791,217 35
Deposits in other banks	1,026,938 85	6,813,610 03	350,515 14	8,191,064 02
All other assets	631,932 54	6,655,083 51	1,251,395 76	8,538,411 81
Totals	\$80,248,687 72	\$57,770,367 57	\$13,913,374 86	\$151,932,430 15
<i>Liabilities.</i>				
Capital paid up	\$4,659,503 14	\$23,628,931 85	*\$9,227,538 03	\$37,515,973 02
Reserve and surplus fund	3,001,444 60	5,713,943 43		8,715,388 03
Due depositors	71,468,581 36	24,440,891 47	4,218,958 96	100,128,431 79
All other liabilities	1,119,158 62	3,986,600 82	466,877 87	5,572,637 31
Totals	\$80,248,687 72	\$57,770,367 57	\$13,913,374 86	\$151,932,430 15

* Amount due head offices at London by the Branches, but represents the capital employed here June 30th, 1878.

SECOND REPORTS.

The next semi-annual reports, showing the condition of the banks on the 31st of December, 1878, were sent in more promptly, and very

few of them had to be returned for correction. The Act allows thirty days after the end of each semi-annual term during which to send the reports to our office; but we have requested the banks to send them in as soon as possible after the 30th of June and 31st of December, as much time is required to correct and compile them. It will not incommode them, and will facilitate our work very much if we can, hereafter, receive these reports by the 15th of July and 15th of January.

Five savings banks have gone into liquidation since our examination began in August last, viz., Masonic Savings and Loan Bank, Farmers' and Mechanics' Savings Bank, French Savings and Loan Society, and Odd Fellows' Savings Bank, all doing business in San Francisco, and the Odd Fellows' Savings and Commercial Bank of Sacramento.

The Odd Fellows' Savings Bank of San Francisco did not retire from business until the 5th of February, 1879, but is not included among the banks reporting on the 31st of December, 1878. The particulars concerning the suspension of these banks* will be given in another part of this report.

Four more commercial banks reported their condition on the 31st of December than on the 30th of June, 1878, to wit, the Farmers' Bank of Wheatland, Bank of Bodie, Mono County Bank, and Modesto Bank. The first named bank failed to take out a license or to make a report to us in July last; but we did not proceed against it under the Act, its President having made proper excuses and satisfied us that the neglect on his part was the result of a misunderstanding of the requirements of the Act. The other three are new banks, incorporated several months after the 30th of June reports were made. A summary of the assets and liabilities of the banks and savings banks, as shown in their statements on the 31st December, 1878 (including the four banks just referred to and excluding the five savings banks which have suspended), is given in tabulated form, as follows: (For details, see appendix.)

TABLE NO. 4.

Aggregate Statement of the Banks and Savings Banks on the 31st of December, 1878.

	Twenty-three Savings Banks.	Fifty-six Com- mercial Banks.	Four Foreign Banks.	Total of Eighty- three Banks.
<i>Resources.</i>				
Bank lots and buildings.....	\$905,244 82	\$2,125,772 98	\$70,465 86	\$3,101,483 66
Real estate by foreclosure.....	2,472,460 27	1,855,884 81	52,474 82	4,380,819 90
Loans on real estate.....	51,207,636 87	7,172,024 92	687,508 11	59,067,169 90
Invested in stocks and bonds.....	2,920,478 29	5,039,013 27	73,692 42	8,033,183 98
Loans on stocks and bonds.....	2,302,139 99	11,863,056 08	1,868,239 32	16,033,435 39
Loans on other securities.....	551,380 96	964,816 42	1,418,588 71	2,934,786 09
Loans on personal security.....	1,439,131 22	12,009,048 45	4,531,212 41	17,979,392 08
Money on hand.....	2,375,414 47	7,433,180 49	2,699,129 85	12,507,724 81
Deposits in other banks.....	530,594 96	1,913,687 87	382,384 82	2,826,667 65
All other assets.....	524,829 79	3,927,025 78	2,016,742 91	6,468,598 48
Totals.....	\$65,229,311 64	\$54,303,511 07	\$13,800,439 23	\$133,333,261 94
<i>Liabilities</i>				
Capital paid up.....	\$4,486,210 00	\$23,927,782 14	*\$9,284,730 50	\$37,698,722 64
Reserve and surplus funds.....	2,320,225 76	6,665,343 66		8,985,569 42
Due depositors.....	57,846,025 40	21,316,336 91	3,775,622 49	82,937,984 80
All other liabilities.....	576,850 48	2,394,048 36	740,086 24	3,710,985 08
Totals.....	\$65,229,311 64	\$54,303,511 07	\$13,800,439 23	\$133,333,261 94

*Amount due head offices at London.

THE COMPARATIVE CONDITION OF THE BANKS.

In the foregoing tables (Nos. 3 and 4) have been presented the aggregate items of assets and liabilities of the banks as reported to the Bank Commissioners on the 30th of June, and 31st of December, 1878. We now exhibit in tabulated form the characteristics of the six months' business:

TABLE No. 5.

Showing the changes in the aggregate items of the Savings Banks, from June 30th to December 31st, 1878.

	Twenty-eight Banks, June 30; Twenty- three Banks, December 31.	Statement of the five sus- pended Banks, June 30, 1878.	Changes in the Twenty-three Banks continuing Business.	
	Decrease.		Decrease.	Increase.
<i>Resources.</i>				
Bank lots and buildings.....	\$1,446,672 52	\$2,168,007 52		\$721,335 00
Real estate by foreclosure.....				
Loans on real estate.....	7,924,675 34	6,914,913 48	\$1,009,761 86	
Invested in stocks and bonds.....	353,920 57	372,449 73		18,529 16
Loans on stocks and bonds.....	1,816,857 24	1,630,909 38	185,947 86	
Loans on other securities.....	626,513 38	355,794 21	270,719 17	
Loans on personal security.....	858,354 83	276,033 30	582,321 53	
Money on hand.....	1,388,935 56	307,109 66	1,081,825 90	
Deposits in other banks.....	496,343 89	527,156 68		30,812 79
All other assets.....	107,102 75	229,486 25		122,383 50
Totals.....	\$15,019,376 08	\$12,781,860 21	\$3,130,576 32 893,060 45	\$893,060 45
Total decrease in (23) live banks			\$2,237,515 87	
<i>Liabilities.</i>				
Capital paid up.....	\$173,293 14	\$294,093 14		\$120,800 00
Reserve fund.....	681,218 84	418,355 16	\$262,863 68	
Due depositors.....	13,622,555 96	11,729,527 30	1,893,028 66	
All other liabilities.....	542,308 14	339,884 61	202,423 53	
Totals.....	\$15,019,376 08	\$12,781,860 21	\$2,358,315 87 120,800 00	\$120,800 00
Total decrease in (23) live banks			\$2,237,515 87	

TABLE No. 6.

Showing the changes in the aggregate items of the Commercial Banks, from June 30th to December 31st, 1878.

	Fifty-two Banks June 30, and Fifty-six Banks December 31.		Four Foreign Banks at San Francisco.	
	Decrease.	Increase.	Decrease.	Increase.
<i>Resources.</i>				
Bank lots and buildings		\$47,806 97		
Real estate by foreclosure		1,021,034 22		\$8,505 63
Loans on real estate	\$230,864 54			29,018 04
Invested in stocks and bonds		1,938,235 91		6,595 90
Loans on stocks and bonds		2,399,160 07		61,065 24
Loans on other securities		384,747 45		453,589 35
Loans on personal security	785,417 89		\$1,187,948 44	
Money on hand	613,578 80		280,978 18	
Deposits in other banks	4,899,922 16			31,869 68
All other assets	2,728,057 73			765,347 15
Totals	\$9,257,841 12 5,790,984 62	\$5,790,984 62	\$1,468,926 62 1,355,990 99	\$1,355,990 99
Total decrease	\$3,466,856 50		\$112,935 63	
<i>Liabilities.</i>				
Capital paid up		\$298,850 29		*\$57,192 47
Surplus fund		951,400 23		
Due depositors	\$3,124,554 56		\$443,336 47	
All other liabilities	1,592 552 46			273,208 37
Totals	\$4,717,107 02 1,250,250 52	\$1,250,250 52	\$443,336 47 330,400 84	\$330,400 84
Total decrease	\$3,466,856 50		\$112,936 63	

* Increase in amount due head offices at London.

The large withdrawal of deposits (\$1,893,028 66) from the live savings banks, during the six months ending December 31st, 1878, is not surprising when it is considered that five savings banks—four in San Francisco and one at Sacramento—have closed since the examinations of the Commissioners began in August last.

The great decrease in the amount due depositors by the commercial banks for the same period (\$3,567,891 03) has no significance when attention is called to the fact that the amount on deposit with the Nevada Bank of San Francisco was \$3,557,398 37 less on the 31st of December than on the 30th of June, 1878. The changes in this bank are on so large a scale that a comparison of the aggregate items of the commercial banks is practically useless unless it be excluded.

BANK COMMISSIONERS' EXAMINATIONS.

During the past year we have visited and examined all the incorporated banks of the State with the exception of four, viz.:

The Odd Fellows' Savings and Commercial Bank, Sacramento.

The Bodie Bank, Bodie, Mono County.

The Mono County Bank, Bodie, Mono County.

The Bank of La Porte, La Porte, Plumas County.

The first named bank closed its doors last September, about the time a visit from the Bank Commissioners was expected.

The two banks at Bodie were incorporated and began business late last year. The Bank of La Porte is virtually a private bank—its

President and Cashier owning all the stock, and stating in an affidavit, attached to its last semi-annual statement, that over two-thirds (\$16,900 out of \$25,200) of the deposits are due to them personally. Under the circumstances, we deemed it an unnecessary expenditure of time and money to visit them.

Copies of the statements, sent by us to the Attorney-General, showing the condition of the banks at the date of examination of each, will be found appended to this report. We have endeavored in our examinations to obtain as reliable information as possible, in the limited time at our disposal, of the financial standing of the borrowers and the value of the various investments and securities. We have written off what we considered bad and very doubtful accounts, and in many cases have required considerable reductions in the amount at which real estate was carried on the books.

MASONIC SAVINGS AND LOAN BANK—SAN FRANCISCO.

This was the first bank examined by the Bank Commissioners.

We began our examination on the 21st of August, 1878, after bank hours. The following statement shows the condition of the bank at the close of business that day, according to its books:

Assets.		Liabilities.	
Real estate by foreclosure -----	\$128,001 09	Capital paid up -----	\$148,693 14
Loans on real estate -----	788,052 04	Reserve fund -----	50,921 65
Loans on stocks and bonds -----	33,950 00	Due depositors -----	1,099,976 15
Loans on other securities -----	231,110 00	Contingent dividend -----	40,450 06
Money on hand -----	32,362 90	Interest account -----	6,868 24
Deposits in other banks -----	160 66	Other liabilities -----	1,021 57
Office furniture, etc. -----	5,825 48		
Interest accrued -----	116,010 64		
Expenses, taxes, etc. -----	8,689 45		
Other assets -----	3,768 55		
Total -----	\$1,347,930 81	Total -----	\$1,347,930 81

A few hours' examination of the character of the above assets satisfied us that the institution was insolvent. Included in "loans on other securities," was a loan of \$224,500, secured by "Navy Pay Certificates," (generally known as the "Pinney Certificates,") and in "interest accrued" was a large amount of back interest on the same. We regarded this whole amount—principal and interest—as utterly without value.

The depreciation in value of the real estate acquired by foreclosure, added to the loss just mentioned, left no doubt in our minds, without examining further, that the capital and reserve of the bank were entirely exhausted, and that depositors would suffer a loss of ten per cent. We met the Directors at nine o'clock next morning (August 23d) and notified them of the result of our investigation. The Directors owned nearly all the stock of the bank, and being unable, or unwilling, to guarantee the repayment of the capital, we required immediate notice to be published that the institution had gone into liquidation.

It is not at all to the credit of the officers and Directors of this bank

that within a month of our examination they had paid a dividend to stockholders, and published a sworn statement showing a large surplus, when, as they should have known, the bank was in reality insolvent.

The following letter and statement have just been received, concerning the present condition of the bank's affairs:

OFFICE OF MASONIC SAVINGS AND LOAN BANK, SAN FRANCISCO.

To the Bank Commissioners:

Herewith please find statement, as per your request, (having no assistant in the bank, I have been unable to prepare it sooner):

Since the bank went into liquidation it has paid off forty per cent. of its liabilities to its depositors, and has collected a portion (say one-quarter) of the fifth installment of ten per cent. What the "ultimate outcome" will be it is difficult to determine, owing to the great depression of the times, but we are hopeful for an improvement, which, if realized, will enable us to pay our depositors nearly (if not quite) in full. Our expenses have been reduced to the very lowest in order to accomplish this end, our rent being only nominal, and but one salary paid for conducting the business. Everything is being done that can be to collect in money on our securities, and our real estate is being disposed of as fast as we can find purchasers for it, several sales having already been effected.

Our statement is for June 21st, that being our day for making monthly balances. It will be seen that the item of \$224,500—"loans on Navy Pay Certificates"—is still carried as an asset, it being questionable with us whether we have the right to ignore it. It will also be seen, however, that the items of "capital," "reserve fund," and "earnings" (interest, etc.) nearly offset the same on the side of liabilities. Trusting that the foregoing will prove satisfactory, and such a report as you desire, we remain,

Yours, very respectfully,

H. T. GRAVES, Secretary.

SECRETARY'S STATEMENT—JUNE 21ST, 1879.

Assets.		Liabilities.	
Real estate by foreclosure -----	\$156,721 13	Capital paid in -----	\$148,693 14
Loans on real estate -----	408,099 09	Reserve fund -----	50,921 24
Loans on stocks and bonds -----	37,000 00	Due depositors -----	652,261 96
Loan on navy pay certificates -----	224,500 00	Interest account -----	19,189 69
Money on hand -----	5,448 45	Exchange -----	111 68
Furniture, safes, etc. -----	5,790 48	Profit and loss -----	501 24
Interest accrued -----	27,576 55		
Expenses, taxes, etc. -----	3,015 80		
Other assets -----	3,527 45		
Total -----	\$871,678 95	Total -----	\$871,678 95

So far the prompt and economical liquidation of this bank has justified our belief that where a bank's affairs have been honestly administered it is better to allow its old officers and Directors to have control of the settlement of its business than to put it into the hands of a Receiver. The familiarity of the former with the condition of the loans and investments, as well as with the character of the borrowers and depositors, gives them a great advantage over the latter, to say nothing of their natural ambition to achieve good results. But the bank should continue under the supervision of the Bank Commissioners. A difference of opinion exists as to the powers of the Commissioners in this respect under the present Act.

FARMERS' AND MECHANICS' BANK OF SAVINGS—SAN FRANCISCO.

On the 29th and 30th of August, 1878, we were engaged in examining the affairs of this institution. The following statement was taken from its books, and gives the assets and liabilities of the bank on the 29th of August, at the close of business:

Assets.		Liabilities.	
Real estate by foreclosure -----	\$111,256 02	Capital paid in -----	\$60,000 00
Loans on real estate -----	116,413 85	Reserve fund -----	9,663 43
Invested in stocks -----	14,970 28	Due depositors -----	376,959 35
Loans on sundry securities and on personal security -----	189,417 22	Other liabilities -----	44,385 00
Money on hand -----	34,437 06		
Office furniture, etc. -----	3,770 02		
Other assets -----	20,743 33		
Total -----	\$491,007 78	Total -----	\$491,007 78

Deeming the value of the real estate less than stated above, we requested the Secretary of the bank to furnish us with an appraisal from some recognized expert. This was done, and his valuation was \$103,000. According to our view of the matter, after deducting bad and doubtful debts, and with the shrinkage on real estate, the capital and reserve fund were almost exhausted. The bank had moreover violated the law of this State, which requires a paid up capital of \$300,000 to enable a savings bank to "loan any money without adequate security on real or personal property." After several days allowed them to make arrangements to repair the capital of the bank, the Directors decided to go into liquidation (September 3d). One of the principal causes of the failure of this bank was the making of loans to carry on different unsuccessful enterprises in which some of the Directors were personally interested.

The following letter and statement are submitted:

OFFICE OF FARMERS' AND MECHANICS' BANK OF SAVINGS, }
SAN FRANCISCO, June 28th, 1879. }

To the Bank Commissioners:

In answer to your request, I inclose a statement of the assets and liabilities of the Farmers' and Mechanics' Bank of Savings on the 25th of June, 1879.

The bad or doubtful assets have been deducted.

Since the bank went into liquidation it has paid two dividends to its depositors, aggregating twenty-three and one-half per cent. on the dollar. Every effort has been made that was possible to hasten the settlement of the bank's affairs, and we regret not meeting with better success, but the general depression in business has caused the delay. The prospects are now more encouraging, as there are some trades of country property nearly completed, and we do not doubt that the bank will pay a dividend, in July, of ten per cent. at least.

The expenses of the bank have been reduced by renting the larger portion of the office, and no salary is paid except to the Secretary.

We believe that the bank will be able to pay its depositors in full, even with the depreciation in the value of property, so soon as there is a revival in business, and we hope that all may be settled within one year.

Respectfully yours,

L. G. HARVEY, Secretary.

SECRETARY'S STATEMENT—JUNE 25TH, 1879.

Assets.		Liabilities.	
Real estate by foreclosure	\$92,550 00	Capital paid in	\$60,000 00
Loans on real estate	77,808 71	Reserve fund	9,663 43
Invested in stocks	11,979 88	Due depositors	282,705 95
Loans on stocks and bonds	19,980 00	Interest account	16,007 43
Loans on personal security	26,555 70		
Loans on other securities	26,199 96		
Money on hand	9,919 81		
Office furniture, etc.	1,500 00		
Interest accrued	19,141 83		
Expenses, taxes, etc.	13,199 54		
Doubtful assets	39,541 38		
Total	\$368,376 81	Total	\$368,376 81

We believe the foregoing statement over-estimates the value of the bank's assets, but there is not time to have it corrected.

We shall consider the depositors fortunate if they receive dollar for dollar, with the loss of interest. It is not pleasant to find fault, but it seems to us more life might be infused into the settlement of the bank's affairs. Energy and judgment are needed, as well as economy, to secure a successful liquidation.

FRENCH SAVINGS AND LOAN SOCIETY—SAN FRANCISCO.

The record of this bank forms one of the darkest pages in the banking history of this State, and exemplifies, most forcibly, the evils of a "one man power" in financial institutions.

The bank was organized on the "mutual plan," had its Board of Directors elected annually by its depositors, a Finance Committee appointed by the President, the duty of such committee being to pass upon all applications for loans, to supervise the accounts rendered by the Manager, and to carefully examine, at least once a month, all the books of the Society. Another committee was chosen semi-annually by the members of the Society, whose duty it was to examine and verify the accounts, and to report to a general meeting of the depositors. But practically, Mr. Mahé, the late Manager, had full control, and these committees appear to have signed any statement which he prepared for them. In this way the grossest deceptions were practiced on the depositors. As an instance of which this fact may be mentioned that it does not appear by report of the examining committee, for the term ending June 30th, 1878, that the bank *owned* any real estate—it is all classed as loans, and the rate of interest is stated; while, in fact, the bank had, at that time, real estate taken under foreclosure suits, or in settlement of loans, carried on its books at about \$1,183,000.

The Board of Directors and the several committees utterly failed to perform their duties, doubtless placing implicit confidence in Mr. Mahé, to whom they abandoned all authority. He used his power in the most arbitrary manner, his book-keepers being mere puppets in his hands, making or suppressing entries at his dictation, thus enabling him to practice a systematic course of robbery for years

without detection. Had no supervision been established under State authority, there is no telling when or how it would have ended.

The Commissioners began the investigation of this bank's affairs on the 5th of September, 1878, the result of which is embodied in the following:

REPORT TO THE ATTORNEY-GENERAL.

SAN FRANCISCO, October 1st, 1878.

Honorable Jo Hamilton, Attorney-General:

DEAR SIR: In accordance with Section 4 of the Act creating a Board of Bank Commissioners, we beg leave to report as follows:

On the 5th ultimo the Bank Commissioners entered into an examination of the affairs of the "French Mutual Provident Savings and Loan Society," and continued until the 7th. This preliminary investigation disclosed practices discreditable to the management of the bank. Loans had been made to Directors of the bank in violation of article twenty-six of its by-laws, some of which, as well as other loans, were believed to be on insufficient securities. It was deemed necessary that we should have a valuation of the property owned by the bank, and of certain of its real estate securities, made by some recognized experts. Pending the time necessary to receive such reports, two of the Commissioners, Messrs. Watt and Murphy, were designated to visit certain other banks in the country, and Mr. Coleman, who remained, applied himself to obtaining further information respecting the affairs of the French Bank. He discovered some irregularities, such as a loan to a Director on second mortgage, the security being insufficient. The books of the institution did not always show who the real debtor was, and it was only by an examination of all the papers that the facts were reached. Mr. Coleman demanded further security on these loans, and Mr. Mahé deeded property in this city, valued at \$36,000, for this purpose. He also gave his personal guarantee, in the sum of \$168,000, to secure a doubtful loan on the shares of a corporation, but in the light of subsequent events this guarantee is not worth much.

On the 17th of September the Manager, Mr. Mahé, committed suicide, and at the request of the Directors our investigation was delayed until they had looked into affairs.

On the 25th ultimo the investigation was resumed by a full Board. We have examined all the notes and mortgages and collateral securities, as well as the books of the bank, with the following result:

The late Gustave Mahé is ascertained to be a defaulter in the sum of \$316,285 75, his speculations having begun in 1872, and continued, at intervals, until the 12th of last month. Mr. Mahé had been in the habit of drawing sums of money from the accounts of certain depositors residing in France, under the pretence that he had instructions to remit the same. In some instances these sums were returned, but the aggregate amount so withdrawn and appropriated to his own use is about \$167,000. These sums were regularly entered in the "deposit book" by the Cashier. It was the duty of another clerk to post from the "deposit book" to the ledger, and Mr. Mahé would instruct this clerk not to enter these particular sums in the ledger until he had ordered him to do so. By failing to post these sums, fraudulently withdrawn, the ledger showed the true condition of the accounts of the individual depositors, and the amount due depositors as shown by the "deposit book" agreed with the totals of assets and cash on hand. It was only by a comparison of the aggregate credit balance of upwards of six thousand ledger accounts, with the amount due depositors as shown by the "deposit book," that the discrepancy could be ascertained. The remainder is comprised of sums collected on account of interest and principal on certain loans, which sums were receipted for by Mr. Mahé, but not entered on the books of the bank. The money of depositors has been used to some extent to pay dividends. Interest was charged up regularly on unproductive property, and upon loans on which no interest had been paid for two years, and on the 30th of June last, in order to make up the amount of dividend it was thought desirable to pay, the sum of \$18,000 unearned interest was capitalized, that is he charged up this amount of interest in advance, on a certain large loan, in order to bring up the earnings to the desired amount.

The bank is organized under an "Act to provide for the formation of corporations for certain purposes," passed April 14th, 1853, and as its name indicates, is a mutual association, having no capital stock.

Article three of its by-laws reads: "Mutuality is the unchangeable basis of the institution."

Article thirty-two reads: "Members participate mutually and proportionately to their respective deposits, in the benefit and the losses of the Society."

Article seventy-five reads: "No liquidation can take place before the expiration of the twentieth year, unless determined upon by a majority of the members representing three-fourths of the deposits."

Each depositor is a member of the Society, and subscribes to the by-laws on making his first deposit.

It is claimed that an institution organized as this is, its liabilities being due to its own members only, cannot become insolvent; that when a loss is made the amount should be ascertained as early as practicable, and charged to the accounts of the members of the Society in proportion to the amount of their several deposits. On this subject the written opinion of the Honorable

John A. Stanley, concurred in by the Honorable Delos Lake, has been laid before us, a copy of which we transmit herewith. Be pleased to inform us, as soon as practicable, whether you concur in the views expressed therein. In the opinion of this Commission the bank would best subserve the interest of the depositors by going into liquidation, but in view of the legal opinion referred to, and the expressed desire of many French residents to have the bank continue, it is probable that they will elect to continue business.

Having this contingency in view, and looking to the protection of new depositors, a majority of this Commission believe it to be their duty to scale down such securities as in their judgment are insufficient. They have adopted the expert's figures where expert testimony was offered, excepting in a few instances of certain pieces of real estate owned by the bank in which the cost to the bank was lower than the expert's figures. In those cases they have adopted the bank's figures. When expert testimony was not obtainable they have sought information from the best available sources.

The following named gentlemen have valued the real estate in San Francisco: Maurice Dore, H. A. Cobb, R. H. Sinton, W. H. Boyce, and S. P. Middleton.

The condition of the bank at the opening of business on the 25th of September, 1878, as appears by the books, without deductions for shrinkage in values or bad loans, was as follows:

Assets.		Liabilities.	
Real estate owned by the bank	\$1,163,473 11	Deposits	\$5,322,033 38
Loans on real estate	2,996,967 29	Reserve fund	251,433 55
Chattel mortgage	100,000 00	Building fund	14,304 62
Invested in bonds	135,500 00	Interest received	39,248 59
Loans on stocks and bonds	976,019 08	Dividends unpaid	244,337 91
Deposit in London and San Francisco Bank	150,414 67		
Money on hand	13,214 24		
Office furniture	6,315 19		
Bank license	843 70		
General expense	5,716 35		
Tax on deposits	4,087 14		
Tax on personal property	716 67		
Expenses resisting mortgage tax	1,808 86		
G. Mahé's defalcation	316,285 75		
Total	\$5,871,358 05	Total	\$5,871,358 05

After deducting the sum of \$38,150 40 for depreciation of property owned by the bank, and \$439,857 99 as a possible loss on loans not sufficiently secured, and adding to liabilities interest capitalized and not earned \$9,875 01, the following statement is presented of the bank's assets and liabilities:

Assets.		Liabilities.	
Real estate owned by the bank	\$1,125,314 71	Due depositors, including dividends unpaid	\$5,566,371 29
Loans on real estate	2,765,753 37	Reserve fund	251,433 55
Chattel mortgage	100,000 00	Building fund	14,304 62
Invested in bonds	135,500 00	Interest received	39,248 59
Loans on stocks and bonds	767,375 01	Interest capitalized, not earned	9,875 01
Deposits in London and San Francisco Bank	150,414 67		
Money on hand	13,214 24		
Office furniture	6,315 19		
Bank license	843 70		
General expenses	5,716 35		
Tax on deposits	4,087 14		
Tax on personal property	712 67		
Expenses resisting mortgage tax	1,808 86		
Deficiency	804,177 15		
Total	\$5,881,233 06	Total	\$5,881,233 01

There is, however, a reserve fund of \$251,433 35, and a building fund of \$14,304 62, together \$265,738 17, which deducted from \$804,177 15, the amount of deficiency as shown above, leaves a net deficiency of \$538,438 98.

We do not wish to be understood, however, as stating that the outcome will be so favorable, and, as before stated, the Commissioners are unanimous in recommending that the bank go into liquidation.

In May last \$100,000 in one sum was taken by Mr. Mahé, and as late as the 12th of September the sum of \$25,000. It appears to us that if rigorous measures were taken by the bank officers the disposition of these sums might be ascertained, and this much, we think, is due to the unfortunate depositors. There was evidently great want of diligence on the part of the Directors of the Society, and criminal subserviency or complicity on that of employes, which allowed Mr. Mahé, during six years, unchecked, to rob the Society as he did, and we think if the corporation continues business a change of the Board of Directors and employes is absolutely necessary.

Very respectfully,

ROBT. WATT,
JAMES T. MURPHY,
Bank Commissioners.

I concur in above report in every particular except in the "scaling down" of certain loans without expert testimony having first been received thereon.

EVAN J. COLEMAN, Commissioner.

The bank reorganized in January, 1879, with a capital stock, which capital is a guarantee to the new depositors only. The following resolutions, passed by the Board of Trustees on the 22d day of January, 1879, show the basis on which the bank is now organized, and the relation which the corporation bears to the old members:

WHEREAS, After an examination of the affairs of this corporation, in the judgment of the Board of Trustees, its entire assets are of less value than the aggregate amount of its deposits, and that it would be unjust to such persons as may hereafter become members of this corporation, that the deposits they may make therewith should participate in the losses which the corporation has heretofore sustained; be it, therefore,

Resolved—First, That it is hereby declared that the entire assets of this corporation is less in value than the aggregate amount of deposits, made with the corporation, remaining this day to the credit of the respective members of this corporation.

Second, That a new set of books shall be opened for the future business of this corporation, so as to keep its future business separate and distinct from its past business.

Third, That from and after this date no further dividends shall be made or declared, by way of interest, upon any deposit with this corporation existing at this time.

Fourth, That the Board of Trustees will proceed, as rapidly as may be consistent with good management, to realize all the present assets of the corporation, and from time to time to distribute the same among all the present members of the corporation, pro rata; that is to say, in proportion to the amount of their respective deposits.

In response to an inquiry from this office, touching the present condition of the bank, the following letter and statement were received:

OFFICE OF THE FRENCH SAVINGS AND LOAN SOCIETY, SAN FRANCISCO.

To the Bank Commissioners:

On the 22d day of January, 1879, the Trustees of this corporation decided to liquidate the business of the corporation up to that date, and in pursuance of such decision they have, since then, realized, of the assets of the corporation then existing, the sum of \$703,900, and they have distributed, pro rata, among the members of the corporation at that time, the sum of \$673,903, being two dividends, the one of seven and the other of five per cent. upon the amount appearing on the said 22d day of January, 1879, to the credit of each member of the corporation.

The Trustees hope that the assets of the corporation, existing January 22d, 1879, will, when realized, meet the expectations which they then formed of paying the members of the corporation sixty-eight per cent. of their respective interests therein.

Yours respectfully,

A. BRAND, Secretary.

SECRETARY'S STATEMENT—JUNE 25TH, 1879.

Assets—Present Estimated Value.		Liabilities.	
Real estate owned	\$560,251 00	Due depositors	\$5,064,337 00
Loans on real estate	2,076,500 00		
Invested in stocks and bonds ..	235,681 48		
Loans on stocks and bonds	279,000 00		
Loans on other securities	100,874 32		
Money on hand	8,012 03		
Deposits in other banks	43,110 34		
Office furniture, fixtures, and safe	1,000 00		
Interest in arrears	14,000 00		
Deficiencies	1,745,907 83		
Total	\$5,064,337 00	Total	\$5,064,337 00

It will be understood that the report of this Commission to the Attorney-General, made October 1st, 1878, on the condition of the bank was based on the experts' valuation of the real estate owned by the bank, and of its real estate securities for loans. Since that date there is a marked depreciation in the value of real estate; the bank has also had an expensive litigation on the question of a Receivership, and the statement last given being based on present values of the real estate and other securities, the estimated amount to be realized by the depositors is materially reduced, the Trustees now placing it at sixty-eight per cent., which we believe is a low estimate.

ODD FELLOWS' SAVINGS AND COMMERCIAL BANK—SACRAMENTO.

This bank failed September 21st, 1878. As has been already stated the Commissioners never made an examination of its affairs, and are, therefore, unable to give a statement of its liabilities at the time of its failure, or an account of the causes thereof. Several weeks ago we addressed a letter to the assignee asking for information on these points, and for a statement of its present condition, but received no reply.

The "People's Savings Bank" was incorporated May 29th, and, we understand, will succeed to the business of the defunct institution.

ODD FELLOWS' SAVINGS BANK—SAN FRANCISCO.

OFFICE OF THE BOARD OF BANK COMMISSIONERS,
SAN FRANCISCO, October 28th, 1878. }

Honorable Jo Hamilton, Attorney-General:

DEAR SIR: The following is a statement of the condition of the Odd Fellows' Savings Bank at the close of business October 19th, 1878:

Resources.		Liabilities.	
Real estate as per appraisement of experts.....	\$490,451 41	Capital paid in.....	\$115,600 00
Loans on real estate after deducting \$15,000 not secured.....	1,939,446 27	Reserved and contingent funds.....	18,264 95
Invested in bonds.....	170,701 42	Rents, premiums, etc.	7,144 39
Money on hand and in bank.....	40,356 37		\$141,009 34
Furniture, safes, etc.....	5,959 96	Due depositors.....	2,614,753 37
Interest accrued.....	63,509 33	Interest collected since 1st July.....	76,888 82
Expenses, taxes, etc.....	9,088 24	Other liabilities.....	4,529 03
Rent due but not collected.....	3,942 72		
Personal loan, \$43,946 06.....			
Total assets.....	\$2,723,455 72	Total liabilities.....	\$2,837,180 56

Total liabilities as above.....	\$2,837,180 56
Total assets as above.....	2,723,455 72
Deficit as regards stockholders.....	\$113,724 84
Total liability to stockholders.....	\$141,009 34
Capital paid in October 28th.....	2,000 00
	\$143,009 34
Deduct deficit as above.....	113,724 84
Surplus as regards depositors.....	\$29,284 50

This bank was incorporated October 13th, 1866, under the mutual plan, but reorganized August 7th, 1878, with a capital stock, of which \$133,500 has been subscribed, and, at this date, \$117,600 paid in. The remainder of the subscribed capital has been called in, to be paid on or before the 15th of November. The item of \$43,946 06, "personal loan," the Directors deem of value, but under our construction of the law we have not included it in our statement of assets. In 1875 the bank lost heavily through loans on stock of the Bank of California, but has recovered to some extent from that blow, and its management is, in our judgment, honest and economical.

Respectfully, your obedient servants,

EVAN J. COLEMAN,
ROBERT WATT,
JAS. T. MURPHY,
Bank Commissioners.

From the fact that the capital stock of this bank had so recently been paid in, and knowing, as we did, that nearly the whole of the indebtedness to depositors had been contracted while the bank was a purely "mutual" association, we were as liberal to stockholders in the above report as the circumstances would justify.

During our investigation, a disposition was exhibited by some of the Directors to question the correctness of our course in classing "interest collected" among the liabilities; but we insisted that it was a liability to depositors, as out of it, after deducting expenses, amount carried to reserve fund, etc., a dividend must be paid to them for the term. We naturally supposed that the publication of our report.

and the fact that the Directors of the bank did not bring the difference of opinion to an issue then, had set the matter at rest.

But we were undeceived on this point when, in January, 1879, the following sworn statement was sent us of the condition of the bank on the 31st of December, 1878:

Assets.		Liabilities.	
Real estate owned	\$649,416 94	Capital paid in	\$128,975 00
Loans on real estate	1,644,330 38	Due depositors	2,395,757 91
Invested in bonds	175,511 42	Other liabilities	8,538 14
Loans on other securities	1,113 57	Balance, surplus	24,839 78
Money on hand	13,423 22		
Deposits in other banks	18,265 30		
Furniture, safes, etc.	5,286 18		
Other assets	50,763 81		
Total	\$2,558,110 83	Total	\$2,558,110 83

To say nothing of the motives of the officers of the bank in making such a flattering statement of its condition, it was hardly to be expected that we would overlook the fact that they had utterly ignored the basis upon which our report of its affairs in October had been made, and disregarded the real estate appraisments of experts of their own selection.

It was generally known that a further depreciation in the value of real estate had taken place meanwhile, and the statement should have given lower, instead of higher, values for the property they had acquired by foreclosure. Judging from the bank's report, that the interest earnings of the depositors, for the preceding term, had been applied to meet losses, which were properly chargeable to the reserve fund and capital stock, and learning on inquiry at the bank that such was the case, we deemed that an injustice had been done the depositors in the interest of the stockholders. Before taking any action on the subject, we addressed the following:

LETTER TO THE ATTORNEY-GENERAL.

SAN FRANCISCO, January 20th, 1879.

Honorable Jo Hamilton, Attorney-General:

DEAR SIR: We have been informed by the President of the Odd Fellows' Savings Bank, of this city, that it has passed the usual semi-annual dividend to its depositors for the term ending December 31st, 1878. As this raises a question of great importance to the depositors of all savings banks in this State having a capital stock, we desire your opinion as to the legality of the proceeding. The Odd Fellows' Savings Bank was incorporated October 13th, 1866, under the savings bank Act, approved April 11th, 1862, as a mutual association, and reorganized August 7th, 1878, under "an Act to add a new section to the Civil Code," approved March 29th, 1878, with a capital stock of \$250,000. At the date of our report to you, October 28th, 1878, on the condition of this bank, as of the 19th of October, the paid up capital was \$117,600, and is now \$128,875. We have always construed the intent of the laws regarding savings banks having capital stock to be:

First—That losses by bad loans, or by the depreciation in the value of their securities, must be charged to the reserve fund.

Second—If the reserve fund is insufficient, the balance must be charged to the capital stock.

Third—When both the reserve fund and the paid up capital are exhausted in this process, the stockholders must make good the capital or the bank be declared insolvent.

We have, moreover, regarded the capital stock as a guarantee to depositors for the net earnings from interest on, as well as for the principal of, their deposits. The concluding words of Section 10 of the Act of April 11th, 1862, are: "But the capital stock and the assets of the corporation shall be a security to depositors who are not stockholders." Do not these words

clearly support our interpretation? And, further, in Section 11 of the same Act you will read: "And the Directors of any corporation formed under this Act, and having no capital stock, shall retain, on each dividend day, at least five per cent. of the net profit of the corporation, to constitute a reserve fund, which shall be invested in the same manner as the other funds of the corporation, and shall be used towards paying any losses which the corporation may sustain in the pursuance of its lawful business." Does not this imply that in the case of a savings bank with capital stock the capital shall take the place of the reserve fund thus created in a mutual association for the payment of losses?

Acting on this theory, in our report to you last October, on the condition of the Odd Fellows' Savings Bank, we treated as a liability some \$76,800 of interest collected since July 1st, and after writing off what we believed at that time to be the amount of losses and shrinkage (as per appraisements of experts), the reserve fund was exhausted and the capital greatly impaired.

The failure of the Directors of this bank to declare a dividend for the term ending December 31st is evidently for the purpose of applying the earnings of the last six months to the repairment of the capital. Is not this really *assessing* depositors instead of stockholders? It is certainly contrary to the spirit, and, we believe, to the letter of the law. We send you, herewith, a printed copy of the by-laws of the bank, under section twenty-two of which, we think, its Directors claim the right to thus appropriate the interest earned on the money of depositors. Section twenty-two reads: "At the expiration of each semi-annual term the *net profits* of said term shall be ascertained, and an amount not exceeding fifteen per cent. thereof set apart and credited to the reserve fund, and from the balance, after deduction of the amount paid for interests on accounts closed during the term, a dividend shall be declared," etc. The words "net profits of said term" evidently mean the residue of gross earnings after paying current expenses and taxes for the term, and surely cannot be distorted so as to permit the deduction of bad loans and losses by the depreciation of assets. In this connection let us call your attention to section nineteen of by-laws, which begins: "For the more perfect security to depositors for the repayment of their deposits, the capital stock shall be kept intact * * * ." This surely does not signify that the interest earned by the deposits shall be used to "keep the capital intact." Such a construction, if decided to be legal, would make "guarantee capital" a superb farce. It is well known that the by-laws of all savings banks, having a capital stock, provide, very properly, for a larger percentage of dividends to stockholders than to depositors, to compensate the former for the risk taken in securing the latter. The Odd Fellows' Savings Bank has the right, under section twenty-two of its by-laws, just quoted, to "set apart and credit to the reserve fund fifteen per cent. of its profits every six months;" and by section twenty-three the rate of dividend on the most favored class of deposits need only be four fifths (4-5) of the rate on capital stock. This should be a sufficient contribution, on the part of depositors, to meet any losses the bank may sustain.

If the law will justify the action of the Directors of this bank, the same course may be followed, term after term, while values are depreciating; and when a revival takes place, the affairs of the corporation can be liquidated, and stockholders *made rich at the expense of depositors*. Such an interpretation of the laws regarding savings banks having capital stock would be destructive of the theory upon which they are founded, and so-called "guarantee capital" become nothing but a delusion and a snare. The doctrine seems to us too unjust to be sustained.

Please inform us, as soon as possible, whether our views are correct, and advise us what course to pursue in the premises.

Very respectfully,

EVAN J. COLEMAN,
ROBT. WATT,
JAMES T. MURPHY,
Bank Commissioners.

The Attorney-General came to San Francisco a few days after the receipt of the foregoing communication to give the matter his personal attention. A lengthy interview took place on the 29th of January, at the office of the Bank Commissioners, between the Directors and attorney of the bank, the Attorney-General, and the Commissioners, but without result, as neither the former nor the latter would recede from their views on this matter. On the next day the following order was issued by the Commissioners:

OFFICE OF THE BOARD OF BANK COMMISSIONERS, }
SAN FRANCISCO, January 30th, 1870. }

Martin Heller, Esq., President Odd Fellows' Savings Bank:

DEAR SIR: We beg to notify you that we consider the passing of a dividend to the depositors, by your Board of Directors, for the term ending December 31st, 1878, a "violation of your charter and of law," for the reasons set forth in our letter to the Attorney-General, dated January 20th, and presented verbally, yesterday, in an interview with yourself, other Directors, and

the attorney of the bank. In compliance with the duty imposed upon us by Section 11 of the Bank Commissioners' Act, we hereby order you to rescind said action as not "in conformity with the requirements of your charter and of law."

Yours respectfully,

EVAN J. COLEMAN,
ROBT. WATT,
JAS. T. MURPHY,
Bank Commissioners.

To this communication came the following reply:

ODD FELLOWS' SAVINGS BANK, }
SAN FRANCISCO, February 1st, 1879. }

To the Honorable the Bank Commissioners:

In compliance with my promise of yesterday, I beg to inform you that I submitted your letter of 30th ultimo to the Board of Directors for their consideration, and they have deemed the matter of so much importance as to warrant its submission to a meeting of shareholders, which has been called for Wednesday evening next, the 5th instant. The result of such meeting will be communicated to you as soon as possible thereafter.

Respectfully yours,

MARTIN HELLER, President.
By BENSON, Secretary.

In the meanwhile the advice of Honorable John A. Stanley had been sought as to this conflict of rights between the depositors and stockholders, and, although the officers of the bank have since declined to show us his opinion, we have knowledge of the fact that it confirmed, practically, our views of the question. The action of the stockholders, as set forth in the following communication, was undoubtedly the result of Judge Stanley's opinion:

ODD FELLOWS' SAVINGS BANK, }
SAN FRANCISCO, February 5th, 1879: }

To the Honorable Bank Commissioners:

In answer to your communication of 30th ultimo, we hereby notify you that at a meeting of the stockholders of this bank, held this evening, the following was unanimously adopted:

Resolved, That we, the stockholders of the Odd Fellows' Savings Bank, have full confidence in the integrity and ability of our present Board of Directors; that we are fully satisfied that they have done all in their power to protect the interests of the bank, its depositors, and stockholders, and as we have voted that the bank go into liquidation it is our opinion that they are entitled to a full expression of our confidence, and are the proper parties to conduct the business thereof to a successful issue.

And in conformity therewith the Board of Directors have adopted the annexed resolutions:

* * * * *
Resolved, That the proper and necessary steps be taken for the collection of all debts now due or about to fall due to this corporation; that all assets be converted into cash as speedily as is consistent with a due regard to the interests of all concerned, in order that apportionments may from time to time be made.

Respectfully yours,

MARTIN HELLER, President.
Per BENSON, Secretary.

The Directors have since shown that they deserved this expression of confidence from the *stockholders* of the bank, so far as *their* interests were concerned, but how about the depositors?

In answer to an inquiry recently made by us, the Secretary of the bank stated that its net earnings, for the six months ending December 31st, 1878, have never been credited to the depositors. In our opinion this is an act of gross injustice to them. It is hardly necessary to add that no interest has been credited to the depositors since the bank went into liquidation, so that they have already suffered a loss of one whole year's interest.

Only one dividend of ten (10) per cent. in liquidation of the amount due depositors has been declared since the bank closed, nearly five

months ago. At this rate the depositors will be the only sufferers in the end, and, if the following statement of the condition of the bank at present is correct, the stockholders are now being "made rich at the expense of depositors," a result foreshadowed in our letter to the Attorney-General.

SECRETARY'S STATEMENT—JUNE 30TH, 1879.

Assets.		Liabilities.	
Real estate—present value.....	\$623,376 96	Capital paid in	\$128,975 00
Loans on real estate	1,268,187 27	Due depositors	1,961,352 31
Invested in bonds	19,000 00	Other liabilities	3,687 32
Money on hand and in bank ..	182,042 88	Profit and loss (surplus).....	2,121 22
Furniture, etc.	1,000 00		
Other assets.....	2,528 74		
Total	\$2,096,135 85	Total	\$2,096,135 85

From the high reputation for business integrity enjoyed by the Directors of the Odd Fellows' Savings' Bank, it was to be expected that no cause for criticism would be given by them in the administration of its affairs; but all the foregoing facts demonstrate conclusively, to our minds, that the officers and Directors of the bank have for months had more in view the extrication of its stockholders from an unfortunate business speculation than an equitable and honorable settlement with the depositors.

BANKS WITH IMPAIRED CAPITAL.

In the course of our examinations we found the capital of the following banks more or less impaired, but not to such an extent as to seriously endanger the interests of depositors, to wit:

Savings banks:

Vallejo Savings and Commercial Bank.

Santa Cruz Bank of Savings and Loan.

Commercial banks:

Bank of Stockton.

Farmers' Bank of Wheatland.

Bank of Dixon.

Modesto Bank.

Bank of Watsonville.

For particulars of the condition of the above-named banks reference is made to the statements of Commissioners' examinations, appended.

The two most serious cases of impaired capital are the Vallejo Savings and Commercial Bank and the Bank of Stockton. A minority of the stockholders of each are desirous of liquidating, and, in our judgment, it would be only an act of justice to them, but this is a matter over which we have no control.

PRIVATE BANKERS.

In July, 1878, we addressed a circular letter to all the private bankers in San Francisco, and many in the country, requesting them to furnish a statement of their assets and liabilities on the 30th of June, as a matter of public interest in connection with the reports of the incorporated banks. Not a single one even had the courtesy to respond.

While we do not advocate the examination of the affairs of private bankers, we are in favor of their being compelled to make semi-annual statements to the Bank Commissioners, but less in detail than those required from corporations.

After our failure to obtain statements from them we did not deem it necessary to demand to examine the affairs of any, as instructed to do by the Attorney-General, for it was a foregone conclusion we should meet with a refusal as no penalty was attached therefor.

SEMI-ANNUAL EXAMINATIONS.

We were unable to comply with the Act last year in so far as it required two examinations of each bank to be made by the Commissioners.

Owing to the delay in receiving and correcting the first semi-annual reports, and to the fact that sixty days from the date the Act went into effect (May 16th) were allowed the banks within which to take out licenses, it was late in August when our examinations began. Moreover, when we had completed the examinations of the savings banks, and of many of the commercial banks in the country, a combination of those doing business at San Francisco (except the Pacific Bank) was formed to contest our right to examine any but savings banks. Some weeks elapsed before the case was heard (February 6th), and it was then decided by the Supreme Court in favor of the right and duty of the Commissioners to examine the affairs of *all incorporated banks*.

We are unanimously of the opinion that the law should be amended so as to require only one examination a year. It is certainly much better for the public service that one careful and thorough examination should be made during the year than a hurried and superficial one every six months.

GENERAL REMARKS.

We have to omit from this report some matters of general interest, the history of the failed savings banks having occupied so much more time and space than was anticipated. We are required, however, by the Act to make a report to the Legislature, early in January next, and can then supply this omission.

The Commissioners have deemed it best to postpone, until then, all suggestions as to amendments to the banking laws of the State, believing that the experience acquired in the next six months will better qualify them to judge what changes are needed. We shall only state here that we are in favor of amending the Bank Commissioners' Act in the following particulars:

1. To require one examination a year instead of every six months.

2. To make the assessments for licenses on a more equitable basis.
3. To change the time of making the annual reports.

We look upon it that the *principal* object of this Commission is to protect the interests of depositors, but, at the same time, not to overlook any injustice to stockholders; also, so far as possible, to correct practices which are dangerous, and to introduce reforms which are conducive to the safety and prosperity of both depositors and stockholders.

Condensed statements will be found in the appendix, which, we believe, will be very useful to bankers and others for reference.

The tables containing the aggregate liabilities to stockholders and depositors, and showing the percentage of the former to the latter, will be very reassuring to depositors, for it discloses the fact that in many cases over one-half the assets of a bank must be worthless before any loss can reach the depositor.

CONCLUSION.

It is with pleasure we state that the officers and Directors of the banks throughout the State have treated us with uniform courtesy, and have shown a desire, almost without exception, to afford us all information which would facilitate our examinations. We do not, of course, claim that we have detected every weak spot in their financial condition, but we do think that great service has been done to the banking institutions of this State, as well as to the public, by the actual and moral effects of supervision.

It must not be expected, however, that no banks will fail hereafter on this account, but it may reasonably be anticipated that the number of failures will be smaller and the effects less disastrous than heretofore.

Respectfully submitted,

EVAN J. COLEMAN,
ROBT. WATT,
JAMES T. MURPHY,
Bank Commissioners.

STATEMENT

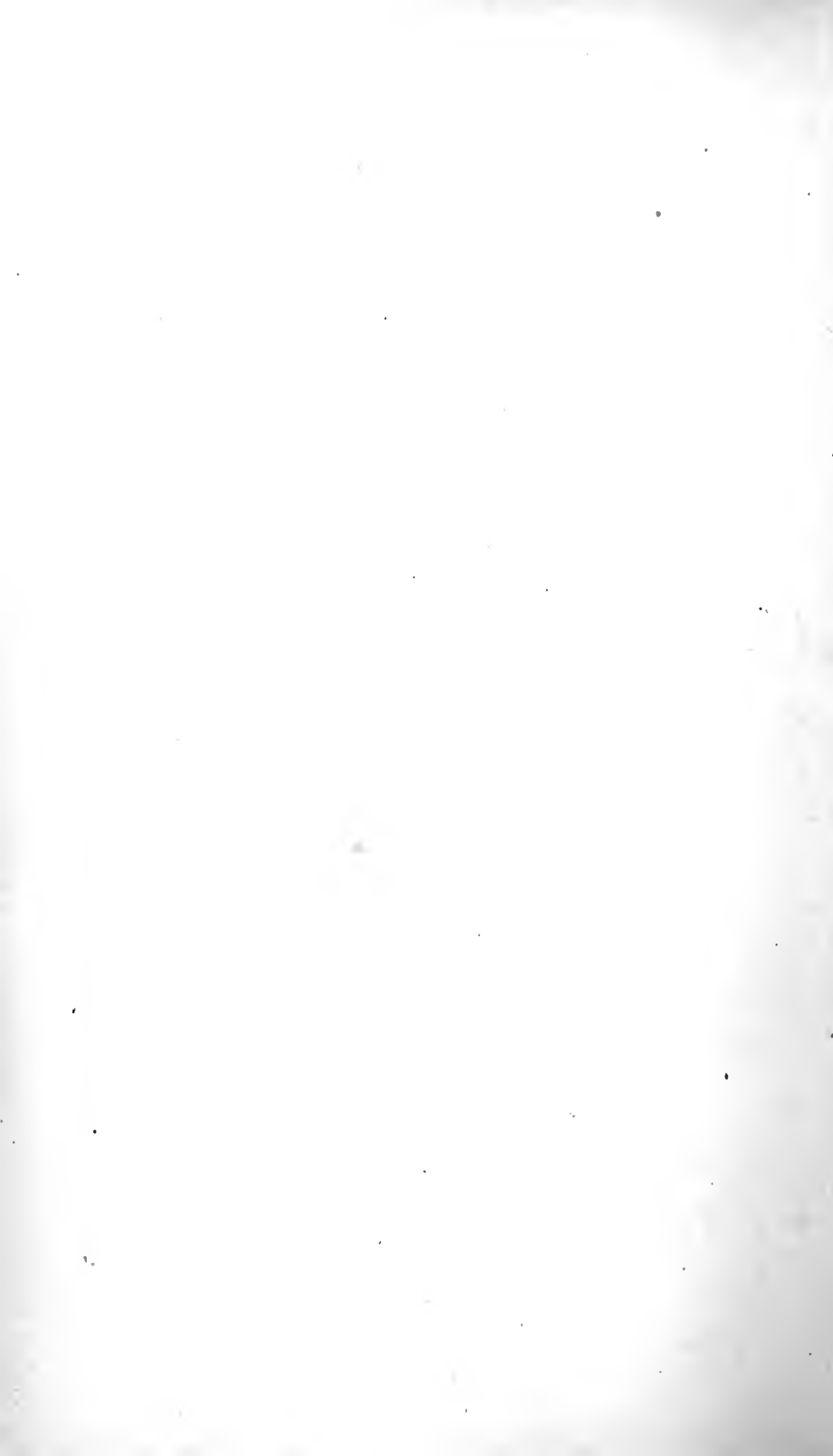
Of all moneys received by the Bank Commissioners from their appointment (May 16th, 1878) to June 30th, 1879.

Total amount received from the banks for licenses (July, 1878, to July, 1879), as per detailed statement in Table No. 1-----	\$13,924 05
July 31st, 1878—Amount paid into State treasury-----	\$13,913 60
July 31st, 1878—Amount paid for transmitting coin-----	10 45
	<hr/> \$13,924 05

[SEAL.] Subscribed and sworn to before me. }
JAMES L. KING, }
Notary Public. }

EVAN J. COLEMAN,
ROBERT WATT,
Commissioners.

APPENDIX.



SEMI-ANNUAL REPORTS

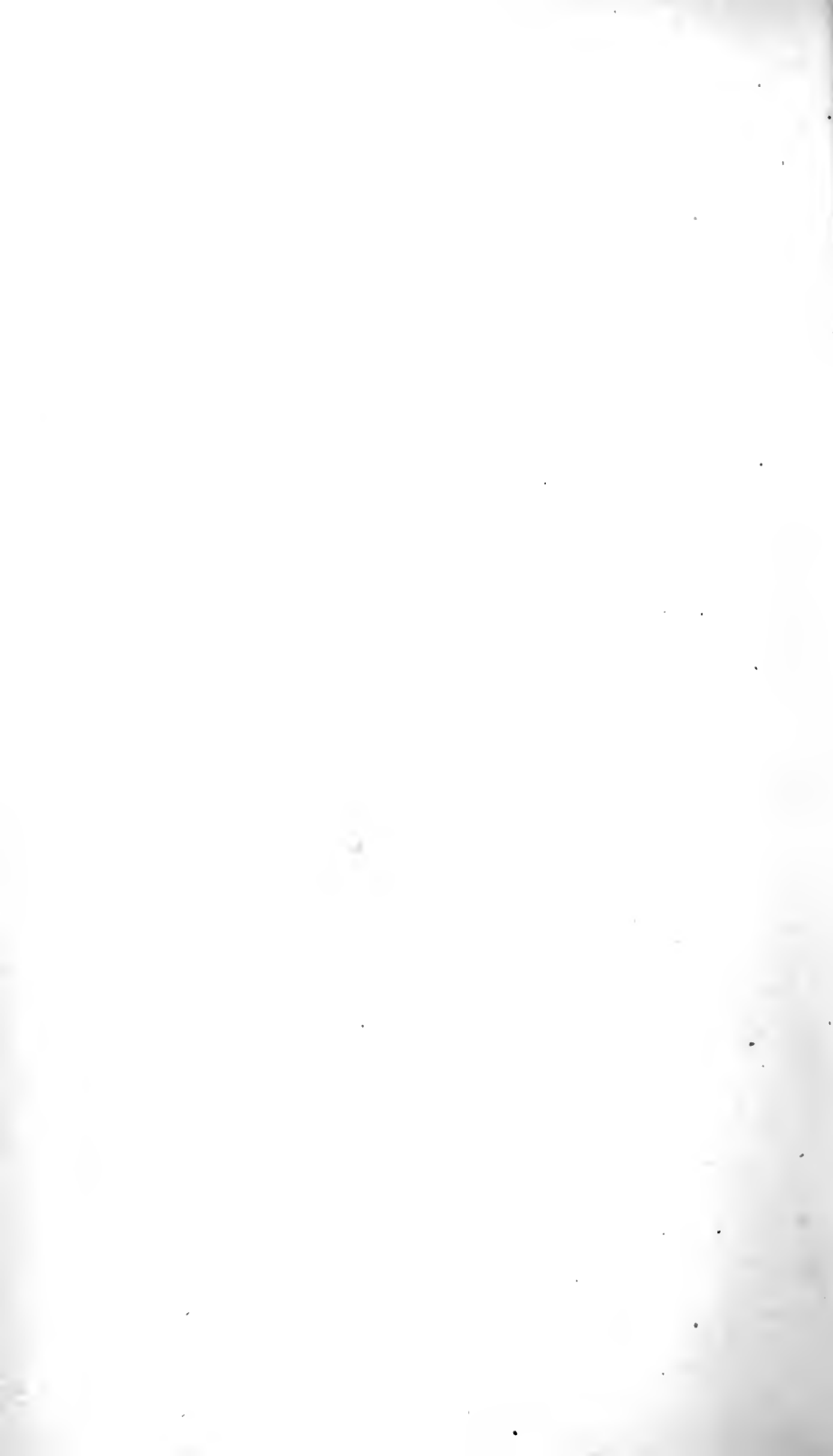
OF THE

SAVINGS BANKS,

JUNE 30th AND DECEMBER 31st,

1878.

[The Banks are arranged alphabetically.]



REPORTS OF SAVINGS BANKS.

CALIFORNIA SAVINGS AND LOAN SOCIETY—SAN FRANCISCO.

[Incorporated June 14th, 1873.]

DAVID FARQUHARSON, President.

VERNON CAMPBELL, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Real estate by foreclosure.....	\$67,800 22	\$61,670 62
Loans on real estate.....	287,567 55	209,481 82
Invested in bonds.....	19,050 00	20,000 00
Loans on stocks.....	14,500 00	15,000 00
Loans on other securities.....	14,220 00	12,600 00
Money on hand.....	13,533 23	10,944 20
Deposits in other banks and places.....		20,490 90
Office furniture, fixtures, and safes.....	1,200 00	200 00
Interest accrued.....		7,252 51
Total resources.....	\$417,871 00	\$357,640 05
<i>Liabilities.</i>		
Capital stock paid in.....	\$63,000 00	\$63,000 00
Reserve fund.....	13,052 98	6,577 93
Due depositors.....	323,469 57	272,836 66
Undivided profits.....	18,348 45	15,225 46
Total liabilities.....	\$417,871 00	\$357,640 05

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$300,000; amount subscribed is \$300,000, divided into 300 shares of \$1,000 each. The total amount actually paid in by stockholders, for capital stock, is \$63,000, being \$210 per share.

The names of the Directors and the number of shares held by each are as follows:

David Farquharson.....	10 shares.	John Easton.....	8 shares.
Charles Lux.....	10 shares.	Robert F. Bunker.....	18 shares.
Julius C. Reis.....	10 shares.	Donald McMillan.....	5 shares.
Alex. C. Corbett.....	10 shares.	James R. Kelly.....	7 shares.
G. Howard Thompson.....	4 shares.		
Edward Farrell.....	11 shares.	Total number held by Directors..	95 shares.
A. P. Hotelling.....	2 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
San Francisco.....	\$31,598 94	\$39,500 00
Merced.....	30,071 68	25,900 00
Totals.....	\$61,670 62	\$65,400 00

CALIFORNIA SAVINGS AND LOAN SOCIETY—Continued.

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
San Francisco	\$72,787 18	Solano	\$3,000 00
San Mateo	32,302 81	Sacramento	2,261 15
Alameda	12,845 62	San Diego	7,924 75
Sonoma	9,860 31	Kern	15,000 00
Contra Costa	12,500 00	Total	\$209,481 82
Merced	27,500 00		
Tulare	13,500 00		

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
20 Dupont Street bonds	\$20,000 00	\$20,000 00

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
240 shares Santa Cruz Lime Company	\$15,000 00	\$45,600 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Term deposit accounts of this bank	\$12,600 00	\$12,600 00

DEPOSITS IN OTHER BANKS.

Deposited in London and San Francisco Bank	\$20,490 90
--	-------------

STATISTICAL INFORMATION.

Supplementary to Report of California Savings and Loan Society, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization	1,441
2. Number of open accounts	533
3. Number of accounts opened last six months	42
4. Number of accounts closed last six months	53
5. Largest amount due any one depositor	\$15,611 05
6. Number of accounts exceeding \$5,000	10
7. Aggregate amount of accounts exceeding \$5,000	\$96,723 95
8. Average amount of each account open	\$525 30
9. Amount deposited during the last six months	\$103,216 81
10. Amount withdrawn during the last six months	\$164,547 87
11. Amount of dividends to depositors for last six months	\$9,304 48
12. Rate per cent. per annum of such dividends	7½ and 6 per cent.
13. Amount of dividends to stockholders for last six months	\$3,780
14. Rate per cent. per annum of same on paid up capital	12 per cent.
15. Amount added to reserve fund last six months	\$277 92
16. Expenses (including taxes, \$910 08) for the last six months	\$5,269 70
17. Amount of net earnings last six months	\$13,362 40
18. Total amount of dividends to depositors since organization	\$109,274 90

CALIFORNIA SAVINGS AND LOAN SOCIETY—*Continued.*

- | | |
|--|-----------------|
| 19. Average rate per annum of dividends to depositors since organization---- | 8.417 per cent. |
| 20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?----- | Monthly. |
| 21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date? ----- | Nothing. |

CAPITAL SAVINGS BANK—SACRAMENTO.

[Incorporated February 8th, 1869.]

R. S. CAREY, President.

JAS. N. PORTER, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building-----	\$100,000 00	\$100,000 00
Real estate by foreclosure-----	99,755 44	377,575 03
Loans on real estate-----	1,380,978 73	1,223,505 77
Invested in stocks, bonds, and warrants-----	46,753 72	36,234 46
Loans on stocks, bonds, and warrants-----	164,363 10	109,795 12
Loans on other securities-----	635,627 05	149,949 75
Loans on personal security-----	1,022,467 24	580,926 53
Money on hand-----	150,612 04	119,782 42
Deposits in other banks and places-----	30,194 09	26,754 26
Office furniture, fixtures, and safes-----	3,350 00	3,450 00
Other assets not above enumerated-----	1,868 50	81,446 79
Total resources-----	\$3,635,969 91	\$2,809,420 13
<i>Liabilities.</i>		
Capital stock paid in-----	\$300,000 00	\$300,000 00
Reserve fund-----	215,291 54	20,338 78
Due depositors-----	2,896,403 48	2,436,217 93
Due banks and bankers-----	224,274 89	52,863 42
Total liabilities-----	\$3,635,969 91	\$2,809,420 13

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$500,000; amount subscribed is \$500,000, divided into 5,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$300,000, being \$60 per share.

The names of Directors and the number of shares held by each are as follows:

R. S. Carey-----	154 shares.	D. W. Earl-----	304 shares.
L. Williams-----	254 shares.	C. T. Wheeler-----	304 shares.
C. W. Clarke-----	304 shares.		
Frederick Cox-----	200 shares.	Total number held by Directors-----	1,670 shares.
Albert Gallatin-----	150 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Mar- ket Value.
Butte-----	\$323,776 50	\$323,776 50
Sutter-----	1,622 44	1,000 00
Sacramento-----	52,176 09	56,176 09
Totals-----	\$377,575 03	\$380,952 59

CAPITAL SAVINGS BANK—*Continued.*

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned	Name of County.	Amount Loaned.
Sacramento -----	\$365,793 54	Sutter -----	\$2,038 00
Yolo -----	160,706 19	Nevada and Placer -----	12,000 00
Placer -----	38,713 63	Nevada and Sierra -----	25,000 00
Solano -----	89,596 80	Placer and Sacramento -----	57,873 29
Butte -----	138,700 38	Storey County, Nevada -----	1,910 79
Colusa -----	323,257 28		
Amador -----	5,090 00	Total -----	\$1,223,505 77
Yuba -----	2,831 87		

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
White Pine County bonds (and interest) -----	\$3,990 00	\$3,990 00
Sacramento City Water-works certificates of indebtedness.	18,907 09	18,907 09
Alpine County warrants -----	3,870 25	3,870 25
Amador County warrants (and interest) -----	6,967 12	6,967 12
Home Mutual Insurance Company's stock -----	1,600 00	1,600 00
Pacific Mutual Life Insurance Company's stock -----	900 00	900 00
Totals -----	\$36,234 46	\$36,234 46

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Bank and insurance companies' stock -----	\$62,682 50	\$64,780 00
Gold Run Ditch and Mining Company's stock -----	9,805 23	15,000 00
Sacramento Wood Company's stock -----	11,287 50	72,000 00
Alpine County warrants -----	3,050 00	3,600 00
Sacramento City claims allowed (payable in May, 1879) -----	13,548 37	13,548 37
Bank, insurance, railroad, and other stocks -----	9,421 52	18,450 00
Totals -----	\$109,795 12	\$187,378 37

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Pass books of this bank -----	\$3,020 00	\$3,020 00
Wheat in warehouse -----	19,404 15	25,200 00
Certificates of deposit and money on deposit -----	122,525 60	122,525 60
Life insurance policy and unsettled claim on land -----	5,000 00	5,000 00
Totals -----	\$149,949 75	\$155,745 60

DEPOSITS IN OTHER BANKS.

Due from foreign banks and bankers -----	\$1,427 76
Due from Bank of Dixon -----	775 83
Due from Kern Valley Bank -----	24,550 67
Total -----	\$26,754 26

CAPITAL SAVINGS BANK—Continued.

PROPERTY NOT OTHERWISE ENUMERATED.

Building and machinery near Sacramento City	\$30,042 68
Real estate, machinery, etc., Sacramento City	51,404 11
Total	\$81,446 79

STATISTICAL INFORMATION.

Supplementary to Report of Capital Savings Bank on the morning of January 1st, 1879.

1. Total number of accounts opened since organization	8,805
2. Number of open accounts	1,913
3. Number of accounts opened last six months	279
4. Number of accounts closed last six months	296
5. Largest amount due any one depositor	\$376,129 00
6. Number of accounts exceeding \$5,000	53
7. Aggregate amount of accounts exceeding \$5,000	\$1,005,772 64
8. Average amount of each account open	\$1,078 35
9. Amount deposited during the last six months	\$820,989 24
10. Amount withdrawn during the last six months	\$1,101,048 45
11. Amount of dividends to depositors for last six months	\$83,616 41
12. Rate per cent. per annum of such dividends	8 per cent.
13. Amount of dividends to stockholders for last six months	None.
14. Rate per cent. per annum of same on paid up capital	None.
15. Amount added to reserve fund last six months	\$12,401 67
16. Expenses (including taxes, \$—) for the last six months	\$19,909 76
17. Amount of net earnings last six months	\$96,018 08
18. Total amount of dividends to depositors since organization	\$1,948,334 61
19. Average rate per annum of dividends to depositors since organization	9.87 per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	December, 1878.
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	\$75 60

COMMERCIAL AND SAVINGS BANK OF SAN JOSÉ—SAN JOSÉ.

[Incorporated May 8th, 1874.]

E. McLAUGHLIN, Manager.

HERMAN HOFFMAN, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Real estate by foreclosure	\$43,939 68	\$45,689 68
Loans on real estate	791,155 30	693,029 65
Invested in stocks and warrants	31,888 16	72,107 38
Loans on stocks	41,541 31	81,950 50
Loans on other securities		45,033 05
Loans on personal security	169,790 73	130,797 74
Money on hand	31,846 63	64,013 78
Deposits in other banks and places	17,408 92	14,312 98
Office furniture, fixtures, and safes	5,617 37	5,617 37
Other assets not above enumerated	4,000 00	
Total resources	\$1,167,188 10	\$1,152,552 13
<i>Liabilities.</i>		
Capital stock paid in	\$300,000 00	\$300,000 00
Reserve fund	79,198 44	81,561 58
Due depositors	787,989 66	752,990 55
Undivided profits		18,000 00
Total liabilities	\$1,167,188 10	\$1,152,552 13

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$1,000,000; amount subscribed is \$1,000,000, divided into 10,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$300,000, being \$30 per share.

The names of the Directors and the number of shares held by each are as follows:

E. McLaughlin	1,667 shares.	G. W. Cozzens	100 shares.
C. T. Ryland	1,667 shares.	E. Williams	560 shares.
B. D. Murphy	667 shares.	M. Malarin	125 shares.
Return Roberts	570 shares.		
L. Lion	250 shares.	Total number held by Directors ..	5,966 shares.
Jacob Rich	420 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Merced	\$9,622 30	\$11,985 00
Fresno	36,067 38	45,420 00
Totals	\$45,689 68	\$57,405 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
Alameda	\$6,134 00	Santa Cruz	\$6,625 00
Fresno	4,959 56	San Luis Obispo	9,720 75
Merced	102,867 50	State of Nevada	71,672 37
Monterey	66,509 13		
Santa Clara	408,541 34	Total	\$693,029 65
San Benito	16,000 00		

COMMERCIAL AND SAVINGS BANK OF SAN JOSÉ—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Santa Clara County warrants	\$68,107 38	\$70,650 00
Eureka Warehouse Company stock	4,000 00	5,000 00
Totals	\$72,107 38	\$75,650 00

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
San José Water Company's stock—800 shares	\$30,334 00	\$48,000 00
Santa Clara Valley Mill and Lumber Company's stock— 337½ shares	29,764 26	50,625 00
San José Woolen Mill Company's stock—29 shares	1,000 00	1,450 00
Gilroy Water Company's stock—1,500 shares	18,395 00	22,500 00
Hollister Water Company's stock—9,995 shares	2,457 24	5,000 00
Totals	\$81,950 50	\$127,575 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Grain in warehouse	\$45,033 05	\$55,310 00

DEPOSITS IN OTHER BANKS.

Due from foreign banks and bankers	\$2,254 65
Due from Eugene Kelly & Company, New York	1,358 85
Due from Donohue, Kelly & Company, San Francisco	10,699 48
Total	\$14,312 98

STATISTICAL INFORMATION.

Supplementary to Report of Commercial and Savings Bank of San José, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization	2,546
2. Number of open accounts	1,193
3. Number of accounts opened last six months	233
4. Number of accounts closed last six months	211
5. Largest amount due any one depositor	\$20,000 00
6. Number of accounts exceeding \$5,000	21
7. Aggregate amount of accounts exceeding \$5,000	\$222,990 56
8. Average amount of each account open	\$612 48
9. Amount deposited during the last six months	\$1,883,460 54
10. Amount withdrawn during the last six months	\$1,908,601 66
11. Amount of dividends to depositors for last six months	\$22,296 65
12. Rate per cent. per annum of such dividends	6 and 8 per cent.
13. Amount of dividends to stockholders for last six months	\$18,000 00
14. Rate per cent. per annum of same on paid up capital	12 per cent.
15. Amount added to reserve fund last six months	\$2,363 14
16. Expenses (including taxes, \$2,619 50) for the last six months	\$11,472 17
17. Amount of net earnings last six months	\$42,659 79
18. Total amount of dividends to depositors since organization	\$193,846 89
19. Average rate per annum of dividends to depositors since organization	8.65 per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Dec. 23d, 1878.
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

FARMERS' SAVINGS BANK OF STANISLAUS COUNTY—

MODESTO.

[Incorporated March 31st, 1873.]

A. L. CRESSEY, President.

L. B. WALTHALL, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$4,633 28	\$4,633 28
Other real estate owned	12,598 92	11,344 34
Loans on real estate	80,524 41	63,672 54
Invested in county warrants	17,005 25	13,005 60
Loans on stocks	14,684 73	
Loans on other securities		39,137 20
Loans on personal security	121,931 45	46,033 40
Money on hand	31,381 83	26,564 63
Deposits in other banks and places		16,187 64
Office furniture, fixtures, and safes	2,492 79	2,507 14
Interest accrued	35,286 48	25,305 28
Mortgage tax	1,610 36	
Total resources	\$322,149 50	\$248,391 05
<i>Liabilities.</i>		
Capital stock paid in	\$151,910 00	\$151,910 00
Reserve fund	27,611 36	6,164 22
Due depositors	91,559 73	66,720 85
Due banks and bankers	51,068 41	721 32
Undivided profits		21,927 79
Other liabilities		946 87
Total liabilities	\$322,149 50	\$248,391 05

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$250,000; amount subscribed is \$250,000, divided into 2,500 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$151,910, being \$60 76 per share.

The names of the Directors and the number of shares held by each are as follows:

A. L. Cressey	228 shares.	Caleb Dorsey	62 shares.
L. B. Walthall	206 shares.	William Grollman	20 shares.
S. P. Rogers	190 shares.	G. W. Schell	26 shares.
Robert McHenry	177 shares.	J. F. Kerr	20 shares.
William Enslin	80 shares.		
Isaac Perkins	55 shares.	Total number held by Directors..	1,064 shares.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Stanislaus	\$11,344 34	\$11,629 87

FARMERS' SAVINGS BANK OF STANISLAUS COUNTY—Continued.

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Stanislaus	\$59,572 54
Merced	3,000 00
Tulare	1,100 00
Total	\$63,672 54

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Stanislaus County warrants	\$13,005 60	\$14,000 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Grain in warehouse	\$39,137 20	Not stated.

DEPOSITS IN OTHER BANKS.

Anglo-Californian Bank (San Francisco)	\$3,239 69
Modesto Bank	12,947 95
Total	\$16,187 64

FRANCO-AMERICAN SAVINGS BANK—SAN FRANCISCO.

[Incorporated March 26th, 1877.]

A. COMTÉ, Jr. Manager.

L. BRAND, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Real estate by foreclosure.....		\$5,462 65
Loans on real estate.....	\$144,505 55	148,148 05
Invested in county warrants.....		13,917 11
Loans on stocks.....	6,500 00	8,895 00
Loans on other securities.....	12,495 00	11,172 50
Money on hand.....	2,524 97	5,881 09
Deposits in other banks and places.....	1,671 23	2,000 00
Office furniture, fixtures, and safes.....	3,224 37	3,224 37
Total resources.....	\$170,921 12	\$198,700 77
<i>Liabilities.</i>		
Capital stock paid in.....	\$79,200 00	\$100,000 00
Reserve fund.....	334 11	2,799 93
Due depositors.....	89,981 98	93,900 84
Undivided profits.....	1,405 03	2,000 00
Total liabilities.....	\$170,921 12	\$198,700 77

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$300,000; amount subscribed is \$200,000, divided into 2,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$100,000, being \$50 per share.

The names of the Directors and the number of shares held by each are as follows:

Geo. C. Perkins.....	50 shares.	P. Husson.....	25 shares.
A. Comté, Jr.....	35 shares.	A. E. Sabatie.....	40 shares.
A. Brand.....	230 shares.	A. Boequeraz.....	10 shares.
L. Peres.....	70 shares.	D. McMillan.....	10 shares.
M. Kane.....	25 shares.		
Total number held by Directors.. 495 shares.			

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
San Francisco.....	\$5,462 65	\$6,250 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
San Francisco.....	\$69,159 02	Los Angeles.....	\$1,600 00
Alameda.....	75,874 03		
Santa Clara.....	1,515 00	Total.....	\$148,148 05

FRANCO-AMERICAN SAVINGS BANK—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
City and county warrants	\$13,917 11	\$13,917 11

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
130 shares Spring Valley Water Company's stock	\$6,000 00	\$11,700 00
140 shares Wells, Fargo & Co.'s stock	2,000 00	12,600 00
35 shares French Mutual Building Association	895 00	1,505 00
Totals	\$8,895 00	\$25,805 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Pass-books of this bank	\$11,172 50	\$11,382 84

STATISTICAL INFORMATION.

Supplementary to Report of Franco-American Savings Bank, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization	178
2. Number of open accounts	132
3. Number of accounts opened last six months	41
4. Number of accounts closed last six months	8
5. Largest amount due any one depositor	\$11,382 84
6. Number of accounts exceeding \$5,000	4
7. Aggregate amount of accounts exceeding \$5,000	\$37,428 85
8. Average amount of each account open	\$711 37
9. Amount deposited during the last six months	\$58,478 70
10. Amount withdrawn during the last six months	\$57,330 64
11. Amount of dividends to depositors for last six months	\$2,780 82
12. Rate per cent. per annum of such dividends	7.2 and 6 per cent.
13. Amount of dividends to stockholders for last six months	\$2,000 00
14. Rate per cent. per annum of same on paid up capital	4 per cent.
15. Amount added to reserve fund last six months	\$2,465 82
16. Expenses (including taxes, \$347 94) for the last six months	\$2,971 62
17. Amount of net earnings last six months	\$7,246 64
18. Total amount of dividends to depositors since organization	\$7,066 93
19. Average rate per annum of dividends to depositors since organization	7½ per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Dec. 31st, 1878.
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

GERMAN SAVINGS AND LOAN SOCIETY—SAN FRANCISCO.

[Incorporated February 10th, 1868.]

L. GOTTIG, President.

F. ROEDING, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$85,000 00	\$85,000 00
Real estate by foreclosure	64,594 12	56,692 43
Loans on real estate	8,714,689 42	9,248,132 53
Invested in bonds	81,000 00	81,000 00
Loans on bonds		1,000 00
Money on hand	764,945 65	580,182 08
Office furniture, fixtures, and safes	500 00	555 00
Total resources	\$9,710,729 19	\$10,052,562 04
<i>Liabilities.</i>		
Capital stock paid in	\$100,000 00	\$200,000 00
Reserve fund	65,000 00	75,000 00
Due depositors	9,530,407 24	9,754,176 59
Federal taxes	15,321 95	23,385 45
Total liabilities	\$9,710,729 19	\$10,052,562 04

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$400,000; amount subscribed is \$400,000, divided into 400 shares of \$1,000 each. The total amount actually paid in by stockholders, for capital stock, is \$200,000, being \$500 per share.

The names of the Directors and the number of shares held by each are as follows:

L. Gottig	10 shares.	Nic. Van Bergen	4 shares.
F. Roeding	2 shares.	Claus Spreckles	10 shares.
Chas. Koehler	10 shares.	H. L. Simon	10 shares.
Dan Meyer	10 shares.		
Geo. H. Eggers	10 shares.	Total number held by Directors	76 shares.
Ed. Kruse	10 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
San Francisco	\$53,191 70	\$56,500 00
Solano	3,500 73	4,500 00
Totals	\$56,692 43	\$61,000 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
San Francisco	\$8,254,210 67	San Mateo	\$83,311 22
Alameda	685,333 45	Solano	15,000 00
Marin	92,673 36	Sutter	10,000 00
Sonoma	53,325 62		
Santa Cruz	54,278 20	Total	\$9,248,132 53

GERMAN SAVINGS AND LOAN SOCIETY—Continued.

INVESTED IN BONDS.

Class,	Amount Invested,	Market Value,
Montgomery Avenue bonds-----	\$81,000 00	\$81,000 00

LOANED ON BONDS.

Class,	Amount Loaned,	Market Value,
City and County of San Francisco bonds-----	\$1,000 00	\$1,500 00

STATISTICAL INFORMATION.

Supplementary to Report of German Savings and Loan Society, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization-----	22,878
2. Number of open accounts-----	8,539
3. Number of accounts opened last six months-----	1,686
4. Number of accounts closed last six months-----	1,204
5. Largest amount due any one depositor-----	
6. Number of accounts exceeding \$5,000-----	366
7. Aggregate amount of accounts exceeding \$5,000-----	\$4,233,017 00
8. Average amount of each account open-----	\$1,103 39
9. Amount deposited during the last six months-----	\$3,319,219 85
10. Amount withdrawn during the last six months-----	\$3,113,048 06
11. Amount of dividends to depositors for last six months-----	\$304,390 84
12. Rate per cent. per annum of such dividends-----	7½ and 6¼ per cent.
13. Amount of dividends to stockholders for last six months-----	
14. Rate per cent. per annum of same on paid up capital-----	
15. Amount added to reserve fund last six months-----	\$10,000 00
16. Expenses (including taxes, \$27,046 32) for the last six months-----	\$45,510 44
17. Amount net earnings last six months-----	\$355,627 46
18. Total amount of dividends to depositors since organization-----	\$3,464,429 73
19. Average rate of dividends to depositors since organization-----	9.7 and 8 1-12 per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?-----	July 1st, 1878.
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?-----	10 cents.

HIBERNIA SAVINGS AND LOAN SOCIETY—SAN FRANCISCO.

[Incorporated April 12th, 1859; reincorporated August 29th, 1864.]

MILES D. SWEENY, President.

EDWARD MARTIN, Secretary.

	*Statement July 21, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$181,140 20	\$211,726 72
Real estate by foreclosure	568,135 16	552,470 28
Loans on real estate	13,844,905 52	14,118,432 38
Invested in stocks, bonds, and warrants	1,021,394 73	1,467,410 98
Loans on other securities	2,051 56	2,146 38
Money on hand	912,731 93	224,883 38
Deposits in other banks and places		
Office furniture, fixtures, and safes	696 85	2,003 85
Total resources	\$16,531,055 95	\$16,579,073 97
<i>Liabilities.</i>		
Reserve fund	\$1,247,976 08	\$1,253,832 28
Due depositors	15,283,079 87	15,325,241 69
Total liabilities	\$16,531,055 95	\$16,579,073 97

* Semi-annual terms of this bank formerly closed on the 21st of July and 21st of January, but were changed to December 31st and June 30th of each year, beginning December 31st, 1878, at the request of the Commissioners, for the sake of uniformity.

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

This is a "mutual association," and has no capital stock.

The names of the Directors are as follows: Miles D. Sweeny, C. D. O'Sullivan, John Sullivan, R. J. Tobin, Gustave Touchard, P. McAnan, Peter Donahue, M. J. O'Connor, Joseph A. Donohoe.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
San Francisco	\$395,558 13	\$395,558 13
Alameda	99,312 15	99,312 15
Napa	23,140 00	23,140 00
San Mateo	12,600 00	12,600 00
Solano	21,860 00	21,860 00
Totals	\$552,470 28	\$552,470 28

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
San Francisco	\$12,812,521 51	Santa Cruz	\$18,060 33
Alameda	487,817 50	San Diego	139,184 50
Contra Costa	4,067 51	San Mateo	122,945 09
Marin	203,703 95	Solano	29,574 21
Mendocino	46,709 15	Sonoma	31,657 08
Sacramento	13,580 58	Yuba	500 00
Santa Barbara	42,075 90		
Santa Clara	166,035 07	Total	\$14,118,432 38

HIBERNIA SAVINGS AND LOAN SOCIETY—Continued.

INVESTED IN STOCKS AND BONDS.

Class.		Amount Invested.	Market Value.
United States bonds (currency) 6s.....	\$500,000 00	\$569,660 98	\$605,000 00
United States bonds, 4s of 1907.....	900,000 00	897,750 00	897,750 00
Totals.....	\$1,400,000 00	\$1,467,410 98	\$1,502,750 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Mortgage in litigation (indorser good).....	\$1,917 20	\$2,146 38

STATISTICAL INFORMATION.

Supplementary to Report of Hibernia Savings and Loan Society, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization	67,317
2. Number of open accounts.....	19,594
3. Number of accounts opened last six months.....	2,095
4. Number of accounts closed last six months	1,952
5. Largest amount due any one depositor	\$54,724 37
6. Number of accounts exceeding \$5,000, average, \$7,665 15.....	387
7. Aggregate amount of accounts exceeding \$5,000.....	\$2,966,414 48
8. Average amount of each account open.....	\$780 79
9. Amount deposited during the last six months.....	\$3,487,168 74
10. Amount withdrawn during the last six months.....	\$3,881,329 80
11. Amount of dividends to depositors for last six months.....	\$435,771 21
12. Rate per cent. per annum of such dividends.....	7 per cent.
13. Amount of dividends to stockholders for last six months.....	} Has no capital stock.
14. Rate per cent. of same on paid up capital.....	
15. Amount added to reserve fund last six months.....	\$5,856 20
16. Expenses (including taxes, \$2,391 35) for the last six months	\$34,410 92
17. Amount of net earnings last six months.....	\$493,976 89
18. Total amount of dividends to depositors since organization.....	\$12,872,542 63
19. Average rate of dividends to depositors since organization.....	10.24 per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?.....	July 21st, 1878.
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?.....	Nothing.

HUMBOLDT SAVINGS AND LOAN SOCIETY—SAN FRANCISCO.

[Incorporated November 24th, 1869.]

ADOLPH C. WEBER, President.

A. HARTMANN, Secretary

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building -----	\$73,087 89	\$73,105 89
Real estate by foreclosure -----	28,174 48	28,727 31
Loans on real estate -----	969,541 43	991,561 82
Invested in United States bonds -----	53,453 36	53,453 36
Loans on stocks -----	2,000 00	500 00
Loans on other securities -----	23,318 57	12,554 75
Money on hand -----	30,882 92	11,316 31
Deposits in other banks and places -----	49,249 94	46,946 57
Office furniture, fixtures, and safes -----	3,192 48	2,856 84
Other assets not above enumerated -----	870 12	926 33
Total resources -----	\$1,233,571 19	\$1,221,949 18
<i>Liabilities.</i>		
Capital stock paid in -----	\$80,000 00	\$80,000 00
Reserve fund -----	25,872 17	27,863 07
Due depositors -----	1,123,499 02	1,109,966 11
Dividends unpaid -----	4,200 00	4,120 00
Total liabilities -----	\$1,233,571 19	\$1,221,949 18

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$100,000; amount subscribed is \$100,000, divided into 100 shares of \$1,000 each. The total amount actually paid in by stockholders, for capital stock, is \$80,000, being \$800 per share.

The names of the Directors and the number of shares held by each are as follows:

A. C. Weber -----	5 shares.	C. Lemme -----	2 shares.
David Porter -----	5 shares.	Total number held by Directors-- 19 shares.	
Rudolf Jordan -----	4 shares.		
Hy. Luchsinger -----	3 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Monterey -----	\$28,727 31	\$42,000 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
San Francisco -----	\$775,225 60	Contra Costa -----	\$1,000 00
Alameda -----	111,494 04	San Mateo -----	750 00
Marin -----	58,623 62	Sonoma -----	500 00
Santa Clara -----	35,641 70	Total -----	\$991,561 82
Fresno -----	6,986 81		
San Luis Obispo -----	1,340 05		

HUMBOLDT SAVINGS AND LOAN SOCIETY—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
United States Bonds, 5 per cent. -----	\$53,453 36	-----

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
40 shares San Francisco Gas-light Company's stock -----	\$500 00	\$3,000 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Pass-books of this bank -----	\$12,554 75	\$58,094 00

DEPOSITS IN OTHER BANKS.

Gansl & Cullen, Bankers, San Francisco -----	\$46,946 57
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PROPERTY NOT OTHERWISE ENUMERATED.

Mortgage tax notes -----	\$926 33
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STATISTICAL INFORMATION.

Supplementary to Report of Humboldt Savings and Loan Society, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization -----	2,585
2. Number of open accounts -----	1,653
3. Number of accounts opened last six months -----	126
4. Number of accounts closed last six months -----	90
5. Largest amount due any one depositor -----	\$64,325 00
6. Number of accounts exceeding \$5,000 -----	53
7. Aggregate amount of accounts exceeding \$5,000 -----	\$607,800 00
8. Average amount of each account open -----	\$671 48
9. Amount deposited during the last six months -----	\$432,772 68
10. Amount withdrawn during the last six months -----	\$481,564 93
11. Amount of dividends to depositors for last six months -----	\$35,259 34
12. Rate per cent. per annum of such dividends -----	7½ and 6.3 percent.
13. Amount of dividends to stockholders for last six months -----	\$4,000 00
14. Rate per cent. per annum of same on paid up capital -----	10 per cent.
15. Amount added to reserve fund last six months -----	\$1,990 94
16. Expenses (including taxes, \$2,297 75) for the last six months -----	\$9,855 35
17. Amount net earnings last six months -----	\$39,022 59
18. Total amount of dividends to depositors since organization -----	\$491,076 27
19. Average rate per annum of dividends to depositors since organization -----	9.41 and 7.80 per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger? -----	Jan. 1st, 1879.
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date? -----	None.

LOS ANGELES COUNTY BANK—LOS ANGELES.

[Incorporated May 20th, 1874.]

I. S. SLAUSON, President.

J. M. ELLIOTT, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Real estate by foreclosure	\$22,434 56	\$23,175 75
Loans on real estate	330,531 32	329,567 69
Invested in United States bonds		25,000 00
Loans on stocks and warrants	14,825 00	6,443 75
Loans on other securities	60,150 02	2,724 36
Loans on personal security	67,582 91	90,807 34
Money on hand	29,629 19	36,465 88
Deposits in other banks and places	2,247 75	2,868 89
Office furniture, fixtures, and safes	1,900 00	1,900 00
Total resources	\$529,300 75	\$518,953 66
<i>Liabilities.</i>		
Capital stock paid in	\$286,600 00	\$286,600 00
Reserve fund	41,786 09	39,844 77
Due depositors	176,987 56	169,061 46
Undivided profits, etc.	23,927 10	23,447 43
Total liabilities	\$529,300 75	\$518,953 66

* DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$286,600; amount subscribed is \$286,600, divided into 2,866 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$286,600, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

Robt. S. Baker	10 shares.	Geo. W. Prescott	300 shares.
Prudent Beaudry	20 shares.	I. S. Slauson	104 shares.
Jotham Bixby	100 shares.		
A. W. Bowman	10 shares.	Total number held by Directors ..	564 shares.
V. A. Hoover	20 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Los Angeles	\$14,149 13	\$16,500 00
San Bernardino	9,026 62	13,000 00
Totals	\$23,175 75	\$29,500 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
San Bernardino	\$4,500 00
Los Angeles	325,067 69
Total	\$329,567 69

LOS ANGELES COUNTY BANK—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
United States 4 per cent. coupon bonds	\$25,000 00	\$25,000 00

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
800 shares Los Angeles Smelting Company	\$5,793 75	\$16,440 00
5 shares Los Angeles County Bank	425 00	500 00
Los Angeles County warrants	225 00	248 00
Totals	\$6,443 75	\$17,188 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Grain in warehouse	\$2,664 36	\$3,580 00
Pass-book, this bank	60 00	100 00
Totals	\$2,724 36	\$3,680 00

DEPOSITS IN OTHER BANKS.

Anglo-Californian Bank, San Francisco	\$2,868 89
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STATISTICAL INFORMATION.

Supplementary to Report of Los Angeles County Bank, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization	1,375
2. Number of open accounts	316
3. Number of accounts opened last six months	83
4. Number of accounts closed last six months	96
5. Largest amount due any one depositor	\$9,677 49
6. Number of accounts exceeding \$5,000	4
7. Aggregate amount of accounts exceeding \$5,000	\$28,449 17
8. Average amount of each account open	\$364 23
9. Amount deposited during the last six months	\$42,810 99
10. Amount withdrawn during the last six months	\$63,472 24
11. Amount of dividends to depositors for last six months	\$5,048 37
12. Rate per cent. per annum of such dividends	7 and 9 per cent.
13. Amount of dividends to stockholders for last six months	\$12,897 00
14. Rate per cent. per annum of same on paid up capital	9 per cent.
15. Decrease in reserve fund last six months:	
Charged losses of six months to reserve	\$7,928 67
Added to reserve—profits	4,822 68
Decrease,	\$2,105 99
16. Expenses (including taxes, \$1,866 84) for the last six months	\$8,559 61
17. Amount of net earnings last six months	\$22,082 21
18. Total amount of dividends to depositors since organization	\$37,304 82
19. Average rate per annum of dividends to depositors since organization	8½ per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	December, 1878.
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

NOTE.—Only savings deposits are included in this statement.

MARYSVILLE SAVINGS BANK—MARYSVILLE.

[Incorporated April 8th, 1869.]

M. MARCUSE, President.

F. W. H. AARON, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building.....	\$4,200 00	*\$4,000 00
Real estate by foreclosure.....	30,662 21	55,608 34
Loans on real estate.....	1,119,422 73	954,728 66
Loans on stocks, bonds, and warrants.....	5,776 91	1,485 88
Loans on other securities.....	4,820 73	19,712 15
Money on hand.....	9,608 81	4,633 46
Deposits in other banks and places.....	19,933 99	5,613 00
Office furniture, fixtures, and safes.....	969 84	1,169 84
Other assets not above enumerated.....	3,130 92	-----
Total resources.....	\$1,198,526 14	\$1,046,951 33
<i>Liabilities.</i>		
Reserve fund.....	\$21,790 58	\$18,922 44
Due depositors.....	1,123,262 27	983,460 49
Dividends unpaid.....	53,473 29	44,568 40
Total liabilities.....	\$1,198,526 14	\$1,046,951 33

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

This is a "mutual association," and has no capital stock.

The names of the Directors are as follows: Marcus Marcuse, Charles M. Patterson, David E. Knight, Isaac S. Belcher, and Richard G. Stanwood.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Yuba.....	\$11,735 10	\$11,735 10
Sutter.....	8,873 24	8,873 24
Tehama.....	35,000 00	35,000 00
Totals.....	\$55,608 34	\$55,608 34

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
Yuba.....	\$171,550 10	Placer.....	\$11,961 93
Sutter.....	425,999 08	Tehama.....	11,044 70
Butte.....	287,340 85	Total.....	\$954,728 66
Colusa.....	46,832 00		

MARYSVILLE SAVINGS BANK—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
23 shares Marysville woolen factory stock -----	\$1,080 17	\$2,300 00
2 bonds Levee District No. 2, Sutter County -----	405 71	769 40
Totals -----	\$1,485 88	\$3,069 40

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Grain in warehouse -----	\$19,712 15	\$25,650 00

DEPOSITS IN OTHER BANKS.

Rideout & Smith, Bankers, Marysville -----	\$5,534 21
Other banks -----	78 79
Total -----	\$5,613 00

STATISTICAL INFORMATION.

Supplementary to Report of Marysville Savings Bank, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization -----	3,419
2. Number of open accounts -----	1,192
3. Number of accounts opened last six months -----	121
4. Number of accounts closed last six months -----	245
5. Largest amount due any one depositor -----	\$26,845 34
6. Number of accounts exceeding \$5,000 -----	34
7. Aggregate amount of accounts exceeding \$5,000 -----	\$299,534 28
8. Average amount of each account open -----	\$825 05
9. Amount deposited during the last six months -----	\$180,525 85
10. Amount withdrawn during the last six months -----	\$373,800 92
11. Amount of dividends to depositors for last six months -----	\$44,568 40
12. Rate per cent. per annum of such dividends -----	9 per cent.
13. Amount of dividends to stockholders for last six months -----	} Has no capital stock.
14. Rate per cent. of same on paid up capital -----	
15. Amount added to reserve fund last six months -----	\$7,983 54
16. Expenses (including taxes, \$2,400 78) for the last six months -----	\$7,631 46
17. Amount net earnings last six months -----	\$52,551 94
18. Total amount of dividends to depositors since organization -----	\$700,305 13
19. Average rate of dividends to depositors since organization -----	11.39 per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger? -----	Dec. 31st, 1878.
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date? -----	None.

BANK OF MENDOCINO—MENDOCINO CITY.

[Incorporated July 13th, 1870.]

EUGENE BROWN, President.

WM. HEESER, Secretary.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Real estate by foreclosure	\$7,474 67	\$10,396 86
Loans on real estate	192,935 30	184,681 50
Invested in county warrants		594 50
Loans on stocks	16,097 19	16,004 27
Loans on personal security	9,355 30	28,203 87
Money on hand	3,856 29	2,872 46
Deposits in other banks and places		3,545 85
Office furniture, fixtures, and safes	120 00	120 00
Total resources	\$229,838 75	\$246,419 31
<i>Liabilities.</i>		
Reserve fund	\$6,381 97	\$8,028 72
Due depositors	223,456 78	237,694 47
Other liabilities		696 12
Total liabilities	\$229,838 75	\$246,419 31

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

This is a "mutual association," and has no capital stock.

The names of the Directors are as follows: Wm. Heeser, Augustus Heeser, Chas. W. Denslow, Eugene Brown, Jerome B. Ford, James Townsend, Ruel Stickney.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Mendocino	\$10,396 86	\$10,300 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Mendocino	\$178,196 88
Humboldt	5,784 84
Alameda	699 78
Total	\$184,681 50

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Mendocino County warrants	\$594 50	\$594 50

BANK OF MENDOCINO—Continued.

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
50 shares Mendocino Lumber Company's stock -----	\$16,004 27	\$30,000 00

DEPOSITS IN OTHER BANKS.

Bank of Ukiah -----	\$2,790 79
Agent at Ukiah City -----	755 06
Total -----	\$3,545 85

STATISTICAL INFORMATION.

Supplementary to Report of Bank of Mendocino, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization -----	831
2. Number of open accounts -----	388
3. Number of accounts opened last six months -----	42
4. Number of accounts closed last six months -----	41
5. Largest amount due any one depositor -----	\$12,119 03
6. Number of accounts exceeding \$5,000 -----	3
7. Aggregate amount of accounts exceeding \$5,000 -----	\$29,298 62
8. Average amount of each account open -----	\$612 61
9. Amount deposited during the last six months -----	\$82,630 78
10. Amount withdrawn during the last six months -----	\$79,447 76
11. Amount of dividends to depositors for last six months -----	\$11,054 67
12. Rate per cent. per annum of such dividends -----	9.88 per cent.
13. Amount of dividends to stockholders for last six months -----	} Has no capital stock.
14. Rate per cent. per annum of same on paid up capital -----	
15. Amount added to reserve fund last six months -----	\$1,646 75
16. Expenses (not including taxes, \$245 56) for the last six months -----	\$2,161 32
17. Amount of net earnings last six months -----	\$12,488 72
18. Total amount of dividends to depositors since organization -----	\$107,567 20
19. Average rate per annum of dividends to depositors since organization -----	10.45 per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger? -----	Dec. 31st, 1878.
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date? -----	\$8 65 charged off.

MERCED SECURITY SAVINGS BANK—MERCED.

[Incorporated March 11th, 1875.]

ELIAS PERKINS, President.

CHAS. F. ABBOTT, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$11,823 74	\$11,823 74
Real estate by foreclosure		432 43
Loans on real estate	101,947 02	100,823 90
Invested in county warrants	2,558 20	5,185 22
Loans on county warrants		6,823 76
Loans on other securities	1,573 40	38,424 24
Loans on personal security	31,912 99	9,601 17
Money on hand	11,255 82	16,715 45
Deposits in other banks and places	5,870 66	15,772 31
Interest accrued		4,698 34
Other assets not above enumerated	489 97	
Total resources	\$167,431 80	\$210,300 56
<i>Liabilities.</i>		
Capital stock paid in	\$30,000 00	\$30,000 00
Reserve fund	4,521 43	8,764 88
Due depositors	132,910 37	171,535 68
Total liabilities	\$167,431 80	\$210,300 56

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$300,000; amount subscribed is \$300,000, divided into 3,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$30,000, being \$10 per share.

The names of the Directors and the number of shares held by each are as follows:

Elias Perkins	150 shares.	John K. Law	20 shares.
W. A. Aldrich	405 shares.	M. Goldman	60 shares.
A. W. Bowman	215 shares.		
C. H. Huffman	365 shares.	Total number held by Directors 1,265 shares.	
Geo. H. Fanchue	50 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Merced	\$432 43	\$432 43

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
Merced	\$95,519 63	Tulare	\$1,313 62
Mariposa and Merced	3,700 00	Total	\$100,823 90
Fresno	290 65		

MERCED SECURITY SAVINGS BANK—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Merced County warrants	\$5,185 22	\$5,548 18

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Merced County warrants	\$6,823 76	\$7,326 14

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Grain in warehouse	\$35,610 24	Not stated.
Sundry securities	2,814 00	\$7,996 48
Totals	\$38,424 24	-----

DEPOSITS IN OTHER BANKS.

A. W. Bowman, Treasurer, San Francisco	\$14,313 51
First National Gold Bank, Stockton	1,450 80
Oakland Bank of Savings	8 00
Total	\$15,772 31

STATISTICAL INFORMATION.

Supplementary to Report of Merced Security Savings Bank, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization	599
2. Number of open accounts	212
3. Number of accounts opened last six months	45
4. Number of accounts closed last six months	38
5. Largest amount due any one depositor	\$6,095 13
6. Number of accounts exceeding \$5,000	3
7. Aggregate amount of accounts exceeding \$5,000	\$17,881 93
8. Average amount of each account open	\$802 55
9. Amount deposited during the last six months	\$82,090 80
10. Amount withdrawn during the last six months	\$43,609 73
11. Amount of dividends to depositors for last six months	\$4,295 98
12. Rate per cent. per annum of such dividends	8 per cent.
13. Amount of dividends to stockholders for last six months	\$1,200 00
14. Rate per cent. per annum of same on paid up capital	8 per cent.
15. Amount added to reserve fund last six months	\$4,281 54
16. Expenses (including taxes, \$789 58) for the last six months	\$2,724 41
17. Amount of net earnings last six months	\$9,777 72
18. Total amount of dividends to depositors since organization	\$22,627 02
19. Average rate per annum of dividends to depositors since organization	9.08333 per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Monthly.
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

NAPA VALLEY SAVINGS AND LOAN SOCIETY—NAPA CITY.

[Incorporated September 25th, 1871.]

GEORGE E. GOODMAN, President.

RICHARD DUDDING, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Real estate by foreclosure.....	\$20,452 42	\$14,076 62
Loans on real estate.....	316,754 28	354,059 39
Invested in bonds.....	12,700 00	19,150 00
Loans on stocks.....	47,500 00	
Money on hand.....	84,948 14	48,400 33
Total resources.....	\$482,354 84	\$435,686 34
<i>Liabilities.</i>		
Reserve fund.....	\$39,434 93	\$43,067 14
Due depositors.....	442,919 91	392,619 20
Total liabilities.....	\$482,354 84	\$435,686 34

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$100,000; amount subscribed is \$100,000, divided into 1,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is nothing.

The names of the Directors and the number of shares subscribed for by each are as follows:

George E. Goodman.....	400 shares.	H. C. Boggs.....	1 share.
H. C. Parker.....	10 shares.	P. L. Weaver.....	10 shares.
John Finnell.....	10 shares.		
H. H. Knapp.....	5 shares.	Total subscribed by Directors....	437 shares.
Smith Brown.....	1 share.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Napa	\$14,076 62	\$15,000 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Napa	\$351,859 39
Lake	2,200 00
Total	\$354,059 39

NAPA VALLEY SAVINGS AND LOAN SOCIETY—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
United States bonds	\$1,150 00	} \$19,916 00
County and Town bonds.....	18,000 00	
Totals.....	\$19,150 00	\$19,916 00

STATISTICAL INFORMATION.

Supplementary to Report of Napa Valley Savings and Loan Society, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization.....	1,223
2. Number of open accounts.....	421
3. Number of accounts opened last six months.....	81
4. Number of accounts closed last six months.....	91
5. Largest amount due any one depositor.....	
6. Number of accounts exceeding \$5,000.....	
7. Aggregate amount of accounts exceeding \$5,000.....	
8. Average amount of each account open.....	\$957 50
9. Amount deposited during the last six months.....	\$80,248 99
10. Amount withdrawn during the last six months.....	\$130,549 70
11. Amount of dividends to depositors for last six months.....	\$15,078 42
12. Rate per cent. per annum of such dividends.....	8 per cent.
13. Amount of dividends to stockholders for last six months.....	} Has no paid up capital.
14. Rate per cent. per annum of same on paid up capital.....	
15. Amount added to reserve fund last six months.....	\$3,269 60
16. Expenses (including taxes, \$—) for the last six months.....	\$1,122 64
17. Amount of net earnings last six months.....	
18. Total amount of dividends to depositors since organization.....	\$151,735 53
19. Average rate per annum of dividends to depositors since organization.....	9.53 per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger.....	Monthly.
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?.....	None.

OAKLAND BANK OF SAVINGS—OAKLAND.

[Incorporated August 13th, 1867.]

E. C. SESSIONS, President.

W. W. GARTHWAITE, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building-----	\$79,134 71	\$79,504 71
Real estate by foreclosure-----	49,122 46	42,553 37
Loans on real estate-----	1,409,105 81	1,421,485 66
Invested in bonds and warrants-----	86,808 39	149,439 69
Loans on stocks and warrants-----	25,233 00	9,613 00
Loans on other securities-----	5,450 00	20,721 01
Loans on personal security-----	41,201 85	62,849 48
Money on hand-----	62,329 19	94,870 64
Deposits in other banks and places-----	85,445 41	66,208 52
Office furniture, fixtures, and safes-----	2,000 00	1,788 75
Other assets not above enumerated-----		13,755 42
Total resources-----	\$1,845,830 82	\$1,962,790 25
<i>Liabilities.</i>		
Capital stock paid in-----	\$437,000 00	\$437,000 00
Reserve fund-----	33,240 19	43,400 00
Due depositors-----	1,371,249 64	1,477,977 57
Other liabilities-----	4,340 99	4,412 68
Total liabilities-----	\$1,845,830 82	\$1,962,790 25

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$1,000,000; amount subscribed is \$950,000, divided into 9,500 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$437,000, being \$46 per share.

The names of the Directors and the number of shares held by each are as follows:

E. C. Sessions-----	270 shares.	W. H. Glascock-----	55 shares.
W. E. Miller-----	100 shares.	R. E. Cole-----	55 shares.
A. W. Bowman-----	295 shares.	Samuel Merritt-----	700 shares.
Henry Rogers-----	115 shares.		
W. W. Cameron-----	210 shares.	Total number held by Directors-----	2,210 shares.
W. A. Aldrich-----	410 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Alameda-----	\$38,126 07	\$40,300 00
Merced-----	3,605 82	7,500 00
San Francisco-----	821 48	250 00
Totals-----	\$42,553 37	\$48,050 00

OAKLAND BANK OF SAVINGS—Continued.

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
Alameda	\$1,372,146 31	Tulare	\$2,000 00
Contra Costa	30,300 00	Total	\$1,421,485 66
Merced	13,039 35		
San Joaquin	4,000 00		

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Oakland City bonds	\$36,400 00	\$41,650 00
United States bonds	101,600 00	101,600 00
Oakland City warrants	10,255 79	10,255 79
Alameda County warrants	923 60	972 81
Berkeley warrants	260 30	270 64
Totals	\$149,439 69	\$154,749 24

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
100 shares Union Savings Bank stock	\$2,500 00	\$3,300 00
330 shares Fourteenth Street Railroad Company's stock	2,000 00	8,000 00
499 shares Pacific Coast Dredging Company's stock and collaterals	5,000 00	10,000 00
Oakland City warrants	113 00	116 50
Totals	\$9,613 00	\$21,416 50

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Pass-books, this bank	\$9,821 01	\$46,396 50
Grain in warehouse	7,000 00	7,000 00
Assignments of mortgages, etc.	3,900 00	7,497 26
Totals	\$20,721 01	\$60,893 76

DEPOSITS IN OTHER BANKS.

New York banks and bankers	\$13,102 61
Anglo-Californian Bank, San Francisco	16,531 73
Bank of California, San Francisco	36,574 18
Total	\$66,208 52

PROPERTY NOT OTHERWISE ENUMERATED.

Judgments and other demands in course of settlement	\$13,755 42
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OAKLAND BANK OF SAVINGS—*Continued.*

STATISTICAL INFORMATION.

Supplementary to Report of The Oakland Bank of Savings, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization.....	5,449
2. Number of open accounts.....	1,806
3. Number of accounts opened last six months.....	426
4. Number of accounts closed last six months.....	298
5. Largest amount due any one depositor.....	\$41,520 00
6. Number of accounts exceeding \$5,000.....	49
7. Aggregate amount of accounts exceeding \$5,000.....	\$519,403 51
8. Average amount of each account open.....	\$700 00
9. Amount deposited during the last six months (including last dividend)....	\$492,615 66
10. Amount withdrawn during the last six months.....	\$365,657 17
11. Amount of dividends to depositors for last six months.....	\$42,147 58
12. Rate per cent. per annum of such dividends.....	7.6 per cent.
13. Amount of dividends to stockholders for last six months.....	\$16,606 00
14. Rate per cent. per annum of same on paid up capital.....	7.6 per cent.
15. Amount added to reserve fund last six months.....	\$10,037 54
16. Expenses (including taxes, \$4,412 68) for the last six months.....	\$15,896 25
17. Amount of net earnings last six months.....	\$69,388 88
18. Total amount of dividends to depositors since organization.....	\$460,433 40
19. Average rate per annum of dividends to depositors since organization....	10.015 per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?.....	Dec. 31st, 1878.
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depos- itors at same date?.....	\$6 74

SACRAMENTO SAVINGS BANK—SACRAMENTO CITY.

[Incorporated March 19th, 1867.]

C. H. SWIFT, President.

ED. R. HAMILTON, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$25,275 46	\$25,275 46
Real estate by foreclosure	53,817 88	82,961 12
Loans on real estate	1,902,956 98	1,794,147 46
Invested in bonds	26,150 00	-----
Loans on bonds	2,700 00	-----
Loans on other securities	1,200 00	800 00
Money on hand	301,660 48	129,248 09
Deposits in other banks and places	48,449 43	52,518 91
Expenses and taxes	19,006 07	17,292 68
Total resources	\$2,381,216 30	\$2,102,243 72
<i>Liabilities.</i>		
Reserve fund	\$94,878 79	\$75,506 99
Due depositors	2,110,285 69	1,840,557 20
Contingent dividend	33,341 37	1,469 62
Mortgage tax	43,154 31	44,179 17
Gross earnings	95,863 04	135,902 55
Other liabilities	3,693 10	4,628 19
Total liabilities	\$2,381,216 30	\$2,102,243 72

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

This is a "mutual association," and has no capital stock.

The names of the Directors are as follows: C. H. Swift, Wm. P. Coleman, F. Birdsall, P. Scheld, F. R. Dray.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Sacramento	\$64,300 00	\$66,200 00
Yolo	2,750 00	2,750 00
Napa	15,000 00	30,000 00
San Joaquin	911 12	1,200 00
Totals	\$82,961 12	\$100,150 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
Sacramento	\$439,233 78	Stanislaus	\$87,510 17
Napa	51,195 03	Sutter	39,408 10
Yolo	133,912 85	Butte	332,386 01
Tulare	6,000 00	Merced	22,470 03
Tehama	27,800 10	Placer	26,200 00
San Joaquin	42,506 54	Colusa	334,100 00
Solano	156,226 25	Total	\$1,794,147 46
Yuba	85,198 60		
Alameda	10,000 00		

SACRAMENTO SAVINGS BANK—*Continued.*

LOANS ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Chattel mortgage on machinery of a planing mill-----	\$800 00	\$2,000 00

DEPOSITS IN OTHER BANKS.

Due from First National Gold Bank, San Francisco-----	\$36,278 40
Anglo-Californian Bank, San Francisco-----	11,995 49
Various savings banks, San Francisco-----	4,245 02
Total-----	\$52,518 91

STATISTICAL INFORMATION.

Supplementary to Report of Sacramento Savings Bank, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization-----	10,020
2. Number of open accounts-----	1,963
3. Number of accounts opened last six months-----	None.
4. Number of accounts closed last six months-----	209
5. Largest amount due any one depositor-----	\$30,000 00
6. Number of accounts exceeding \$5,000-----	78
7. Aggregate amount of accounts exceeding \$5,000-----	\$683,070 79
8. Average amount of each account open-----	\$937 41
9. Amount deposited during the last six months-----	\$182,546 62
10. Amount withdrawn during the last six months-----	\$452,691 55
11. Amount of dividends to depositors for last six months-----	\$90,003 88
12. Rate per cent. per annum of such dividends-----	8.4 per cent.
13. Amount of dividends to stockholders for last six months-----	} Has no capital stock.
14. Rate per cent. per annum of same on paid up capital-----	
15. Amount added to reserve fund last six months-----	\$6,000 00
16. Expenses (including taxes, \$---) for the last six months-----	\$19,065 91
17. Amount of net earnings last six months-----	\$115,258 37
18. Total amount of dividends to depositors since organization-----	\$2,332,481 69
19. Average rate per annum of dividends to depositors since organization-----	9½ per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?-----	January 1st, 1879.
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?-----	\$302 82
22. Average rate of interest per annum charged on loans-----	10½ per cent.

SANTA CRUZ BANK OF SAVINGS AND LOAN—SANTA CRUZ CITY.

[Incorporated March, 1870.]

LUCIEN HEATH, President.

E. J. COX, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$16,401 18	\$13,305 46
Real estate by foreclosure	7,409 17	34,325 17
Loans on real estate	173,368 00	138,119 96
Invested in stocks and warrants	6,379 85	1,500 00
Loans on stocks	14,000 00	15,190 00
Loans on other securities (grain, etc.)		
Loans on personal security	51,183 27	5,665 50
Money on hand	24,540 14	17,593 06
Deposits in other banks and places	1,146 57	
Office furniture, fixtures, and safes	1,000 00	4,000 00
Interest accrued	12,120 99	9,140 78
Other assets not above enumerated	1,112 00	527 89
Total resources	\$308,661 17	\$239,367 82
<i>Liabilities.</i>		
Capital stock paid in	\$20,000 00	\$20,000 00
Reserve fund	6,810 04	
Due depositors	281,851 13	219,367 82
Total liabilities	\$308,661 17	\$239,367 82

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31st, 1878.

The amount of capital stock is \$500,000; amount subscribed is \$27,000, divided into 1,000 shares of \$27 each. The total amount actually paid in by stockholders, for capital stock, is \$20,000, being \$20 per share.

The names of the Directors and the number of shares held by each are as follows:

Lucien Heath	5 shares.	E. Austin	5 5-9 shares.
J. S. Green	40 3-5 shares.	Wm. Effy	4 shares.
C. Hoffman	20 4-5 shares.		
S. J. Lynch	8 5-9 shares.	Total held by Directors	88 23-45 shares.
Bernard Peyton	4 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Santa Cruz	\$34,325 17	\$31,750 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Santa Cruz	\$133,146 25
Monterey	4,973 71
Total	\$138,119 96

SANTA CRUZ BANK OF SAVINGS AND LOAN—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Bank stock -----	\$1,500 00	\$1,500 00

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Bank stock -----	\$15,190 00	\$18,500 00

PROPERTY NOT OTHERWISE ENUMERATED.

Taxes advanced on mortgages -----	\$149 40
Rents due and not paid -----	290 00
Profit and loss -----	88 49
Total -----	\$527 89

STATISTICAL INFORMATION.

Supplementary to Report of Santa Cruz Bank of Savings and Loan, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization -----	2,315
2. Number of open accounts -----	525
3. Number of accounts opened last six months -----	97
4. Number of accounts closed last six months -----	12
5. Largest amount due any one depositor -----	\$15,361 50
6. Number of accounts exceeding \$5,000 -----	5
7. Aggregate amount of accounts exceeding \$5,000 -----	\$43,543 43
8. Average amount of each account open -----	\$416 55
9. Amount deposited during the last six months -----	\$93,953 72
10. Amount withdrawn during the last six months -----	\$118,368 80
11. Amount of dividends to depositors for last six months -----	\$8,907 16
12. Rate per cent. per annum of such dividends -----	9 per cent.
13. Amount of dividends to stockholders for last six months -----	None.
14. Rate per cent. per annum of same on paid up capital -----	None.
15. Amount added to reserve fund last six months -----	None.
16. Expenses (including taxes, \$793 63) for the last six months -----	\$2,529 58
17. Amount of net earnings last six months -----	None.
18. Total amount of dividends to depositors since organization -----	Unable to say.
19. Average rate per annum of dividends to depositors since organization -----	Unable to say.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger? -----	Dec. 31st, 1878.
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date? -----	\$1,223 07

SAN FRANCISCO SAVINGS UNION—SAN FRANCISCO.

[Incorporated June 18th, 1862.]

JAMES DE FREMERY, President.

LOVELL WHITE, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$105,027 07	\$105,096 42
Real estate by foreclosure	53,724 56	36,303 41
Loans on real estate	7,812,324 51	8,535,696 98
Invested in bonds	716,130 50	395,568 50
Loans on stocks and bonds	689,064 00	890,864 00
Money on hand	342,915 53	448,793 09
Office furniture, fixtures, and safes	2,540 72	2,693 72
Total resources	\$9,721,726 89	\$10,415,016 12
<i>Liabilities.</i>		
Capital stock paid in	\$400,000 00	\$400,000 00
Reserve fund	49,159 74	50,113 69
Due depositors	9,251,766 88	9,929,883 06
Federal taxes	20,800 27	23,069 13
Other liabilities		11,950 24
Total liabilities	\$9,721,726 89	\$10,415,016 12

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$400,000; amount subscribed is \$400,000, divided into 1,600 shares of \$250 each. The total amount actually paid in by stockholders, for capital stock, is \$400,000, being \$250 per share.

The names of the Directors and the number of shares held by each are as follows:

James de Fremery	80 shares.	C. Adolphe Low	44 shares.
Albert Miller	80 shares.	D. J. Oliver	68 shares.
Washington Bartlett	50 shares.	Charles Pace	56 shares.
Charles Baum	28 shares.		
Alex. Campbell, Sr.	16 shares.	Total number held by Directors ..	442 shares.
Erwin J. Crane	20 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Alameda	\$14,043 54	} \$36,303 41
Santa Clara	10,390 77	
Fresno	4,633 50	
Yuba	7,235 60	
Totals	\$36,303 41	\$36,303 41

SAN FRANCISCO SAVINGS UNION—*Continued.*

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
San Francisco	\$4,161,944 10	Siskiyou	\$28,231 00
Alameda	2,255,461 88	Lake	10,510 00
San Mateo	121,923 00	Tulare	31,070 00
Napa	5,028 00	Ventura	26,442 00
Sonoma	54,859 00	Kern	34,500 00
Solano	41,922 00	Yolo	183,035 00
Fresno	91,246 00	Yuba	35,093 00
Contra Costa	133,707 00	San Diego	5,063 00
Sacramento	172,792 00	San Luis Obispo	206,882 00
Marin	40,056 00	San Benito	253,859 00
Stanislaus	127,215 00	Sutter	750 00
Monterey	139,263 00	Los Angeles	62,901 00
Merced	155,415 00		
Santa Barbara	153,525 00	Total	\$8,535,696 98
Placer	3,004 00		

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
United States 5 per cent. coupon bonds	\$25,895 50	\$27,125 00
United States registered bonds	211,667 00	217,000 00
Bonds of various counties of California	158,006 00	169,944 00
Totals	\$395,568 50	\$414,069 00

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
United States bonds	\$9,589 00	\$11,025 00
Bonds of cities and counties of the State of California	124,386 00	153,470 00
First mortgage bonds of the Spring Valley Water-works Company	301,750 00	412,500 00
Bonds of States, counties, and cities other than those of California	175,833 00	222,300 00
Stock of the Spring Valley Water-works Company	260,635 00	388,800 00
Stock of the San Francisco Gas-light Company	18,671 00	26,250 00
Totals	\$890,864 00	\$1,214,345 00

STATISTICAL INFORMATION.

Supplementary to Report of San Francisco Savings Union, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization	19,854
2. Number of open accounts	9,308
3. Number of accounts opened last six months	1,600
4. Number of accounts closed last six months	840
5. Largest amount due any one depositor	\$68,600 00
6. Number of accounts exceeding \$5,000	494
7. Aggregate amount of accounts exceeding \$5,000	\$5,260,500 00
8. Average amount of each account open	\$1,066 81
9. Amount deposited during the last six months	\$2,806,627 22

SAN FRANCISCO SAVINGS UNION—Continued.

10. Amount withdrawn during the last six months	\$2,128,511 04
11. Amount of dividends to depositors for last six months	\$301,377 53
12. Rate per cent. per annum of such dividends	6.9538 per cent.
13. Amount of dividends to stockholders for last six months	
14. Rate per cent. per annum of same on paid up capital	
15. Amount added to reserve fund last six months	\$953 95
16. Expenses (including taxes, \$25,925 37) for the last six months	\$43,294 73
17. Amount net earnings last six months	\$352,123 44
18. Total amount of dividends to depositors since organization	\$5,012,968 21
19. Average rate per annum of dividends to depositors since organization	8.9437 per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	January 1st, 1879.
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	\$4 22

SAN JOSÉ SAVINGS BANK—SAN JOSÉ.

[Incorporated January 30th, 1868.]

JOHN H. MOORE, President.

H. H. REYNOLDS, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building-----	\$53,773 14	\$53,773 14
Real estate by foreclosure-----	28,486 48	36,484 76
Loans on real estate-----	545,294 18	509,585 34
Invested in county warrants-----		696 90
Loans on stocks, bonds, and warrants-----	14,414 70	4,705 15
Loans on other securities (grain, etc.)-----	16,184 70	11,349 82
Loans on personal security-----	289,139 49	220,571 02
Money on hand-----	60,787 69	81,670 87
Deposits in other banks and places-----	12,293 65	9,887 41
Office furniture, fixtures, and safes-----	4,664 59	4,664 59
Other assets not above enumerated-----	1,059 75	905 73
Total resources-----	\$1,026,098 37	\$934,294 73
<i>Liabilities.</i>		
Capital stock paid in-----	\$300,000 00	\$300,000 00
Reserve fund-----	48,084 43	39,094 86
Due depositors-----	643,706 92	564,375 22
Due banks and bankers-----	23,177 08	8,141 20
Undivided profits-----	9,128 56	22,602 45
Other liabilities-----	2,001 38	81 00
Total liabilities-----	\$1,026,098 37	\$934,294 73

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$600,000; amount subscribed is \$600,000, divided into 6,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$300,000, being \$50 per share.

The names of the Directors and the number of shares held by each are as follows:

J. Q. A. Ballou-----	100 shares.	C. Peebles-----	100 shares.
S. A. Bishop-----	100 shares.	W. H. Stone-----	210 shares.
S. A. Clark-----	150 shares.		
J. H. Moore-----	210 shares.	Total number held by Directors.	995 shares.
H. Messing-----	125 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Santa Clara-----	\$21,992 13	\$25,600 00
San Benito-----	12,960 00	18,875 00
Santa Cruz-----	1,532 63	2,000 00
Totals-----	\$36,484 76	\$46,475 00

SAN JOSÉ SAVINGS BANK—Continued.

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
Santa Clara	\$307,472 84	San Mateo.....	\$64,307 35
Alameda	3,000 00	San Benito.....	22,755 15
Butte	20,000 00	Monterey.....	7,050 00
Contra Costa	53,000 00		
Santa Cruz	32,000 00	Total.....	\$509,585 34

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Santa Clara County warrants.....	\$696 90	\$696 90

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Street railroad stock	\$4,095 15	\$6,600 00
Water company's stock	610 00	1,000 00
Totals.....	\$4,705 15	\$7,600 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Certificates of deposit.....	\$4,075 00	\$4,665 00
Grain in warehouse	7,274 82	13,858 56
Totals.....	\$11,349 82	\$18,523 56

DEPOSITS IN OTHER BANKS.

Due from First National Bank, New York.....	\$6,669 68
Sather & Co., Bankers, San Francisco.....	2,982 10
Santa Cruz and Los Angeles banks	235 63
Total	\$9,887 41

PROPERTY NOT OTHERWISE ENUMERATED.

Taxes paid on real estate loans.....	\$602 93
Insurance on real estate loans.....	302 80
Total	\$905 73

SAN JOSÉ SAVINGS BANK—Continued.

STATISTICAL INFORMATION.

Supplementary to Report of San José Savings Bank, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization :		
Open accounts	6,996	} 23,654
Deposit receipts	9,800	
Certificates deposit	6,858	
2. Number of open accounts		1,423
3. Number of accounts opened last six months, including certificates		1,068
4. Number of accounts closed last six months, including certificates		1,139
5. Largest amount due any one depositor		\$20,000 00
6. Number of accounts exceeding \$5,000		8
7. Aggregate amount of accounts exceeding \$5,000		\$65,138 44
8. Average amount of each account open		\$358 00
9. Amount deposited during the last six months		\$1,776,144 75
10. Amount withdrawn during the last six months		\$1,822,138 70
11. Amount of dividends to depositors for last six months		\$24,445 19
12. Rate per cent. per annum of such dividends		7½ per cent.
13. Amount of dividends to stockholders for last six months		\$15,000 00
14. Rate per cent. per annum of same on paid up capital		10 per cent.
15. Amount added to reserve fund last six months		\$7,602 45
16. Expenses (including taxes, \$——) for the last six months		\$9,188 15
17. Amount of net earnings last six months		\$22,930 32
18. Total amount of dividends to depositors since organization		\$445,026 11
19. Average rate per annum of dividends to depositors since organization		8½ per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	December 7, 1878.	
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?		* \$673 88

* This balance was not taken off with care. The previous balance showed a difference of but 85 cents.

SAVINGS AND LOAN SOCIETY—SAN FRANCISCO.

[Incorporated July 23d, 1857.]

SAMUEL COWLES, President.

C. W. CARMANY, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building-----	\$75,000 00	\$75,000 00
Real estate by foreclosure-----	466,206 22	878,125 53
Loans on real estate-----	7,731,623 79	5,946,996 35
Invested in stocks and bonds-----	676,431 94	455,422 52
Loans on stocks and bonds-----	855,227 91	548,018 66
Money on hand-----	431,993 24	80,265 03
Other assets not above enumerated-----		936 97
Total resources-----	\$10,236,483 10	\$7,984,765 06
<i>Liabilities.</i>		
Capital stock paid in-----	\$500,000 00	\$500,000 00
Reserve fund-----	518,750 00	456,728 82
Due depositors-----	9,179,477 22	7,015,265 24
Federal tax-----	15,181 47	12,771 00
Other liabilities-----	23,074 41	
Total liabilities-----	\$10,236,483 10	\$7,984,765 06

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$1,500,000; amount subscribed is \$500,000, divided into 5,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$500,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

Isaac Hyde-----	300 shares.	Samuel Cowles-----	25 shares.
Wm. Bosworth-----	575 shares.	Samuel Gilmore-----	347 shares.
Annis Merrill-----	400 shares.	J. Brickell-----	50 shares.
H. L. King-----	33 shares.	A. W. Cudworth-----	115 shares.
J. M. Shotwell-----	200 shares.		
E. F. Northam-----	500 shares.	Total number held by Directors-----	2,795 shares.
W. A. Aldrich-----	250 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
San Francisco-----	\$494,786 70	\$507,433 00
San Mateo-----	11,565 07	9,120 00
Tulare-----	48,657 26	44,770 00
Yuba-----	134 00	134 00
Santa Barbara-----	81,536 38	79,120 00
Contra Costa-----	219,114 73	219,300 00
Santa Clara-----	5,601 49	5,500 00
Solano-----	9,404 57	5,600 00
Alameda-----	852 11	2,250 00
San Joaquin-----	6,473 22	5,754 00
Totals-----	\$878,125 53	\$878,981 00

SAVINGS AND LOAN SOCIETY—Continued.

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
San Francisco.....	\$4,695,140 72	Yuba.....	\$3,325 00
Contra Costa.....	13,366 64	San Mateo.....	186,974 45
Alameda.....	503,056 09	Santa Barbara.....	8,897 01
Fresno.....	42,339 70	Monterey.....	25,224 41
San Joaquin.....	27,869 63	San Luis Obispo.....	4,545 00
Merced.....	9,541 55	Napa.....	19,497 33
Los Angeles.....	141,920 88	Sonoma.....	73,645 75
Marin.....	37,157 18	Stanislaus.....	2,698 69
San Diego.....	33,378 79	Tulare.....	31,972 99
San Bernardino.....	16,703 31		
Solano.....	54,063 41	Total.....	\$5,946,996 35
Santa Clara.....	15,667 82		

INVESTED IN STOCKS AND BONDS.

Class.	Par Value.	Amount Invested.	Market Value.
Montgomery Avenue bonds—6 per cent.	\$217,000 00	\$184,899 98	\$184,899 98
Park Improvement bonds—6 per cent.	26,000 00	26,000 00	27,300 00
City of Los Angeles bonds—7 per cent.	39,000 00	39,000 00	35,100 00
Dupont Street bonds—7 per cent.	3,000 00	2,850 00	2,850 00
San Luis Obispo County bonds—10 per cent.	4,000 00	4,000 00	4,000 00
San Diego County bonds—7 per cent.	15,244 00	15,244 00	12,200 00
City of Stockton bonds—8 per cent.	20,000 00	18,400 00	18,400 00
Redwood City bonds—8 per cent.	22,000 00	19,750 00	22,000 00
Los Angeles Railroad bonds—7 per cent.	55,000 00	51,700 00	55,000 00
San Diego City bonds—10 per cent.	29,500 00	27,900 00	23,600 00
200 shares Bank of California stock	18,000 00	17,650 00	17,000 00
570 shares National Gold Bank and Trust Company's stock	57,000 00	32,285 00	45,600 00
Interest accrued but not collected		15,743 54	15,743 54
Totals	\$505,744 00	\$455,422 52	\$463,693 52

LOANED ON STOCKS AND BONDS.

Class.	Par Value.	Amount Loaned.	Market Value.
266 first mortgage bonds Spring Valley Water-works	\$266,000 00	\$175,000 00	\$266,000 00
600 first mortgage bonds North Pacific Coast Railroad Company	600,000 00	225,000 00	225,000 00
170 first mortgage bonds Spring Valley Water-works	170,000 00	110,000 00	170,000 00
3,237 shares Black Diamond Coal Company's stock	323,700 00	38,018 66	48,555 00
Totals	\$1,359,700 00	\$548,018 66	\$709,555 00

SAVINGS AND LOAN SOCIETY—Continued.

STATISTICAL INFORMATION.

Supplementary to Report of Savings and Loan Society, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization	35,704
2. Number of open accounts	6,939
3. Number of accounts opened last six months	478
4. Number of accounts closed last six months	2,404
5. Largest amount due any one depositor	\$87,540 96
6. Number of accounts exceeding \$5,000	280
7. Aggregate amount of accounts exceeding \$5,000	\$2,994,601 56
8. Average amount of each account open	\$1,010 99
9. Amount deposited during the last six months	\$1,238,537 67
10. Amount withdrawn during the last six months	\$3,402,749 65
11. Amount of dividends to depositors for last six months	\$252,863 57
12. Rate per cent. per annum of such dividends	7 per cent.
13. Amount of dividends to stockholders for last six months	None.
14. Rate per cent. of same on paid up capital	None.
15. Amount added to reserve fund last six months	Nothing.
16. Expenses (including taxes, \$14,318 86) for the last six months	\$36,542 82
17. Amount of net earnings last six months	\$301,492 83
18. Total amount of dividends to depositors since organization	\$9,799,401 14
19. Average rate per annum of dividends to depositors since organization	11½ per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	

SECURITY SAVINGS BANK—SAN FRANCISCO.

[Incorporated March 2d, 1871.]

JOHN PARROTT, President.

W. S. JONES, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Loans on real estate	\$1,817,570 31	\$1,840,043 60
Invested in bonds	9,975 00	9,975 00
Loans on stocks, bonds, and warrants	525,700 00	561,403 50
Loans on other securities	18,800 00	29,000 00
Money on hand	25,081 83	14,046 25
Deposits in other banks and places	52,968 72	70,740 34
Office furniture, fixtures, and safes	150 00	150 00
Interest accrued	22,661 10	18,981 76
Other assets not above enumerated		70,000 00
Total resources	\$2,472,906 96	\$2,614,340 45
<i>Liabilities.</i>		
Capital stock paid in	\$150,000 00	\$150,000 00
Due depositors	2,294,840 63	2,447,966 67
Federal tax	5,696 08	4,958 73
Contingent dividend	22,370 25	11,415 05
Total liabilities	\$2,472,906 96	\$2,614,340 45

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$300,000; amount subscribed is \$300,000, divided into 1,200 shares of \$250 each. The total amount actually paid in by stockholders, for capital stock, is \$150,000, being \$125 per share.

The names of the Directors and the number of shares held by each are as follows:

John Parrott	40 shares.	Adam Grant	20 shares.
D. O. Mills	30 shares.	Bartlett Doe	20 shares.
W. F. Babcock	20 shares.	Jerome Lincoln	20 shares.
Wm. Alvord	10 shares.		
Calvin Paige	40 shares.	Total number held by Directors ..	265 shares.
S. L. Jones	65 shares.		

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
San Francisco	\$738,545 27	Colusa	\$164,800 00
Alameda	320,104 00	Los Angeles	120,000 00
Monterey	98,800 00	Contra Costa	3,000 00
Santa Cruz	32,419 10	Merced	11,500 00
Santa Clara	103,029 50	Stanislaus	28,000 00
Butte	6,000 00	Solano	2,000 00
Sonoma	20,517 29	Marin	120,700 00
San Luis Obispo	6,876 44		
Napa	38,752 00	Total	\$1,840,043 60
San Joaquin	25,000 00		

SECURITY SAVINGS BANK—*Continued.*

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
County bonds	\$9,975 00	\$9,975 00

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
United States bonds	\$100,000 00	\$105,000 00
City and County of San Francisco	85,250 00	117,370 00
First mortgage bonds	145,000 00	199,000 00
County warrants	4,800 00	5,966 48
Bank stocks	113,500 00	146,000 00
Gas and water companies' stock	84,000 00	106,214 00
Insurance companies' stock	12,000 00	18,000 00
City street railroad stocks	16,853 50	26,900 00
Totals	\$561,403 50	\$724,450 48

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Pass-books of savings banks	\$29,000 00	\$34,377 50

DEPOSITS IN OTHER BANKS.

Bank of California, San Francisco	\$37,973 99
London and San Francisco Bank (limited), San Francisco	32,766 35
Total	\$70,740 34

PROPERTY NOT OTHERWISE ENUMERATED.

Certificates of deposit of the Bank of California	\$70,000 00
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STATISTICAL INFORMATION.

Supplementary to Report of Security Savings Bank, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization	3,194
2. Number of open accounts	1,245
3. Number of accounts opened last six months	253
4. Number of accounts closed last six months	190
5. Largest amount due any one depositor	\$40,000 00
6. Number of accounts exceeding \$5,000	143
7. Aggregate amount of accounts exceeding \$5,000	\$1,544,673 83
8. Average amount of each account open	\$1,966 11
9. Amount deposited during the last six months	\$737,061 18
10. Amount withdrawn during the last six months	\$583,935 14
11. Amount of dividends to depositors for last six months	\$75,652 17
12. Rate per cent. per annum of such dividends	7 1-5 and 6 per cent.
13. Amount of dividends to stockholders for last six months	\$6,000 00
14. Rate per cent. per annum of same on paid up capital	8 per cent.
15. Amount added to reserve fund last six months	
16. Expenses (including taxes, \$5,247 24) for the last six months	\$12,966 09
17. Amount of net earnings last six months	\$82,409 37

SECURITY SAVINGS BANK—Continued.

18. Total amount of dividends to depositors since organization	\$762,450 36
19. Average rate per annum of dividends to depositors since organization	8.94 and 7.45 per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Dec. 31st, 1878.
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

STOCKTON SAVINGS AND LOAN SOCIETY—STOCKTON.

[Incorporated August 12th, 1867.]

L. U. SHIPPEE, President.

JAS. LITTLEHALE, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Real estate by foreclosure	\$99,735 75	\$63,441 09
Loans on real estate	1,040,523 92	948,064 34
Invested in bonds	6,436 00	6,436 00
Loans on stocks		15,862 40
Loans on other securities		139,992 65
Loans on personal security	187,526 95	234,531 88
Money on hand	98,615 14	272,930 52
Deposits in other banks and places	49,379 23	84,864 80
Office furniture, fixtures, and safes	5,565 35	5,565 35
Interest accrued	98,612 00	74,701 00
Other assets not above enumerated	1,743 00	
Total resources	\$1,588,137 34	\$1,846,390 03
<i>Liabilities.</i>		
Capital stock paid in	\$500,000 00	\$500,000 00
Reserve fund	23,914 57	31,615 66
Due depositors	1,008,315 06	1,256,350 86
Dividends due stockholders	25,000 00	25,000 00
Interest due depositors	30,907 71	33,423 51
Total liabilities	\$1,588,137 34	\$1,846,390 03

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST 1878.

The amount of capital stock is \$500,000; amount subscribed is \$500,000, divided into 5,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$500,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

Fred. Arnold	10 shares.	R. B. Lane	25 shares.
I. S. Bostwick	75 shares.	John H. O'Brien	10 shares.
H. T. Dorrance	20 shares.	Otis Perrin	67 shares.
R. Gnekow	90 shares.	L. U. Shippee	79 shares.
Chas. Haas	50 shares.	A. W. Simpson	50 shares.
H. F. Hubbard	75 shares.		
Samuel Hewitt (deceased)	50 shares.	Total number held by Directors	726 shares.
Wm. Inglis	125 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
San Joaquin	\$27,554 68	\$26,177 00
Stanislaus	32,499 36	35,748 00
Merced	3,387 05	3,500 00
Totals	\$63,441 09	\$65,425 00

STOCKTON SAVINGS AND LOAN SOCIETY—*Continued.*

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
San Joaquin -----	\$605,381 11	Mariposa -----	\$6,600 00
Stanislaus -----	155,101 27	Calaveras -----	1,800 00
Merced -----	128,278 71	Butte -----	5,000 00
Fresno -----	30,303 25		
Kern -----	15,600 00	Total -----	\$948,064 34

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
City of Stockton bonds—eight per cent. -----	\$6,436 00	\$7,290 00

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Bank stock -----	\$15,862 40	\$35,000 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Grain in warehouse -----	\$139,314 65	\$200,000 00
Pass-books of this bank -----	678 00	5,000 00
Totals -----	\$139,992 65	\$205,000 00

DEPOSITS IN OTHER BANKS.

Bank of California, San Francisco -----	\$59,795 44
London and San Francisco Bank, San Francisco -----	5,504 55
Anglo-Californian Bank, San Francisco -----	8,170 63
National Gold Bank of D. O. Mills & Co., Sacramento -----	2,127 56
Laidlaw & Co., Bankers, New York -----	9,266 62
Total -----	\$84,864 80

STATISTICAL INFORMATION.

Supplementary to Report of Stockton Savings and Loan Society, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization -----	2,088
2. Number of open accounts -----	154
3. Number of accounts opened last six months -----	155
4. Number of accounts closed last six months -----	135
5. Largest amount due any one depositor -----	\$39,903 65
6. Number of accounts exceeding \$5,000 -----	30
7. Aggregate amount of accounts exceeding \$5,000 -----	\$302,086 11
8. Average amount of each account open -----	\$575 00
9. Amount deposited during the last six months -----	\$3,475,837 52
10. Amount withdrawn during the last six months -----	\$3,231,489 58
11. Amount of dividends to depositors for last six months -----	\$34,207 72

STOCKTON SAVINGS AND LOAN SOCIETY—Continued.

12. Rate per cent. per annum of such dividends.....	8 per cent.
13. Amount of dividends to stockholders for last six months.....	\$25,000 00
14. Rate per cent. per annum of same on paid up capital.....	10 per cent.
15. Amount added to reserve fund last six months.....	\$7,701 09
16. Expenses (including taxes, \$3,829 77 federal tax paid July, 1878) for the last six months.....	\$11,972 00
17. Amount of net earnings last six months over and above interest or dividends paid to depositors.....	\$45,563 29
18. Total amount of dividends to depositors since organization.....	
19. Average rate per annum of dividends to depositors since organization.....	About 10 per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?.....	Dec. 31st, 1878.
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?.....	None.

UNION SAVINGS BANK—OAKLAND.

[Incorporated May 26th, 1869.]

J. WEST MARTIN, President.

H. A. PALMER, Secretary.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building -----	\$62,725 54	\$63,000 00
Real estate by foreclosure -----	828 39	828 39
Loans on real estate -----	1,475,096 79	1,425,711 68
Invested in bonds and warrants -----	84,546 51	90,963 98
Loans on bonds and warrants -----	30,000 00	4,000 00
Loans on personal security -----	6,685 00	6,685 00
Money on hand -----	20,697 44	67,517 31
Deposits in other banks and places -----	90,473 17	67,314 00
Office furniture, fixtures, and safes -----	1,500 00	
Interest accrued -----	47,516 31	45,266 68
Other assets not above enumerated -----	1,348 00	1,704 34
Total resources -----	\$1,821,417 15	\$1,772,991 38
<i>Liabilities.</i>		
Capital stock paid in -----	\$450,000 00	\$450,000 00
Reserve fund -----	20,000 00	31,000 00
Due depositors -----	1,325,848 25	1,267,530 40
Dividends unpaid -----	23,771 76	23,741 10
Other liabilities -----	1,797 14	719 88
Total liabilities -----	\$1,821,417 15	\$1,772,991 38

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$1,500,000; amount subscribed is \$1,500,000, divided into 15,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$450,000, being \$30 per share.

The names of the Directors and the number of shares held by each are as follows:

A. C. Henry -----	1,575 shares.	Samuel Woods -----	250 shares.
J. West Martin -----	1,800 shares.	Hiram Tubbs -----	200 shares.
J. Mora Moss -----	400 shares.	Chauncey Taylor -----	85 shares.
John C. Hays -----	800 shares.	W. Meek -----	50 shares.
E. A. Haines -----	345 shares.	D. Henshaw Ward -----	100 shares.
Chas. Webb Howard -----	985 shares.	H. A. Palmer -----	50 shares.
S. Huff -----	225 shares.	W. W. Crane, Jr. -----	100 shares.
R. S. Farrelly -----	450 shares.		
R. W. Kirkham -----	500 shares.	Total number held by Directors -----	7,915 shares.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Alameda -----	\$828 39	\$1,000 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
Alameda -----	\$1,381,711 68	Ventura -----	\$20,500 00
Contra Costa -----	15,500 00	Total -----	\$1,423,711 68
San Francisco -----	8,000 00		

UNION SAVINGS BANK—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Alameda County bonds -----	\$13,779 66	\$13,879 66
Fresno County bonds -----	34,000 00	36,720 00
City and County of San Francisco bonds -----	22,018 57	22,018 57
Tehama County warrants -----	13,660 83	18,224 41
Alameda County warrants -----	7,504 92	7,504 92
Totals -----	\$90,963 98	\$98,347 56

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Shasta County warrants -----	\$4,000 00	\$4,505 00

DEPOSITS IN OTHER BANKS.

Union National Gold Bank, Oakland -----	\$67,314 00
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PROPERTY NOT OTHERWISE ENUMERATED.

Rents due, suspense, etc. -----	\$1,704 34
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STATISTICAL INFORMATION.

Supplementary to Report of Union Savings Bank, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization -----	5,458
2. Number of open accounts -----	2,154
3. Number of accounts opened last six months -----	410
4. Number of accounts closed last six months -----	406
5. Largest amount due any one depositor -----	\$39,138 93
6. Number of accounts exceeding \$5,000 -----	40
7. Aggregate amount of accounts exceeding \$5,000 -----	\$454,135 80
8. Average amount of each account open -----	\$588 45
9. Amount deposited during the last six months -----	\$483,065 98
10. Amount withdrawn during the last six months -----	\$541,083 83
11. Amount of dividends to depositors for last six months -----	\$43,929 90
12. Rate per cent. per annum of such dividends -----	7.6 per cent.
13. Amount of dividends to stockholders for last six months -----	\$22,500 00
14. Rate per cent. per annum of same on paid up capital -----	10 per cent.
15. Amount added to reserve fund last six months -----	\$11,000 00
16. Expenses (including taxes, \$4,920 55) for the last six months -----	\$11,001 03
17. Amount of net earnings last six months -----	\$76,087 44
18. Total amount of dividends to depositors since organization -----	\$489,540 73
19. Average rate per annum of dividends to depositors since organization -----	10.189 per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger? -----	Nov. 25th, 1878.
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date? -----	90 cents.

VALLEJO SAVINGS AND COMMERCIAL BANK—VALLEJO.

[Incorporated May 3d, 1870.]

E. J. WILSON, President.

JNO. R. ENGLISH, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building-----		
Real estate by foreclosure-----	\$53,795 09	\$54,115 09
Loans on real estate-----	34,275 88	27,959 80
Invested in bonds and warrants-----	3,287 52	3,417 09
Loans on stocks and warrants-----	3,960 00	4,585 00
Loans on other securities-----	26,209 10	16,063 10
Loans on personal security-----	22,675 57	22,458 29
Money on hand-----	10,862 24	15,824 14
Deposits in other banks and places-----	3,049 41	24,568 58
Office furniture, fixtures, and safes-----	2,671 40	2,739 65
Other assets—deficit-----	106,654 96	106,780 82
Total resources-----	\$267,441 17	\$278,511 56
<i>Liabilities.</i>		
Capital stock paid in-----	\$217,700 00	\$217,700 00
Reserve fund-----		
Due depositors-----	45,785 20	60,328 84
Due banks and bankers-----		
Other liabilities-----	3,955 97	482 72
Total liabilities-----	\$267,441 17	\$278,511 56

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$300,000; amount subscribed is \$217,700, divided into 2,177 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$217,700, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

E. J. Wilson-----	277 shares.	J. C. Edgecumbe-----	1 share.
C. Hartson-----	400 shares.	G. W. Smith-----	1 share.
A. T. Robinson-----	55 shares.		
M. Fletcher-----	52 shares.	Total number held by Directors.	789 shares.
S. G. Hilborn-----	3 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Solano-----	\$34,275 80	\$17,500 00
Napa and Solano-----	19,839 29	20,000 00
Totals-----	\$54,115 09	\$37,500 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Solano-----	\$27,959 80

VALLEJO SAVINGS AND COMMERCIAL BANK—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Solano County warrants	\$2,417 09	\$2,590 00
Solano County road bonds—7 per cent.	1,000 00	1,000 00
Totals	\$3,417 09	\$3,590 00

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
41 shares stock of this bank	\$2,210 00	\$2,050 00
Solano County warrants	2,375 00	2,720 00
Totals	\$4,585 00	\$4,770 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Life insurance policy	\$1,000 00	\$2,500 00
Grain and merchandise in warehouse	9,690 00	11,150 00
Deposit in this bank	5,209 10	3,000 00
Lease on piano	164 00	250 00
Totals	\$16,063 10	\$16,900 00

DEPOSITS IN OTHER BANKS.

Wells, Fargo & Company's Bank, San Francisco	\$24,568 58
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STATISTICAL INFORMATION.

Supplementary to Report of Vallejo Savings and Commercial Bank, on the morning of January 1st, 1879.

1. Total number of accounts opened since organization	1,492
2. Number of open accounts	145
3. Number of accounts opened last six months	40
4. Number of accounts closed last six months	16
5. Largest amount due any one depositor	\$2,200 00
6. Number of accounts exceeding \$5,000	None.
7. Aggregate amount of accounts exceeding \$5,000	None.
8. Average amount of each account open	\$355 37
9. Amount deposited during the last six months	
10. Amount withdrawn during the last six months	
11. Amount of dividends to depositors for last year	\$1,261 03
12. Rate per cent. per annum of such dividends	7 per cent.
13. Amount of dividends to stockholders for last six months	None.
14. Rate per cent. per annum of same on paid up capital	
15. Amount added to reserve fund last six months	None.
16. Expenses (including taxes, \$1,042 55) for the last year	\$5,349 75
17. Amount of net earnings last year	\$4,611 81
18. Total amount of dividends to depositors since organization	\$58,809 96
19. Average rate per annum of dividends to depositors since organization	7 and 10 per cent.
20. As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	January 1st, 1879.
21. What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

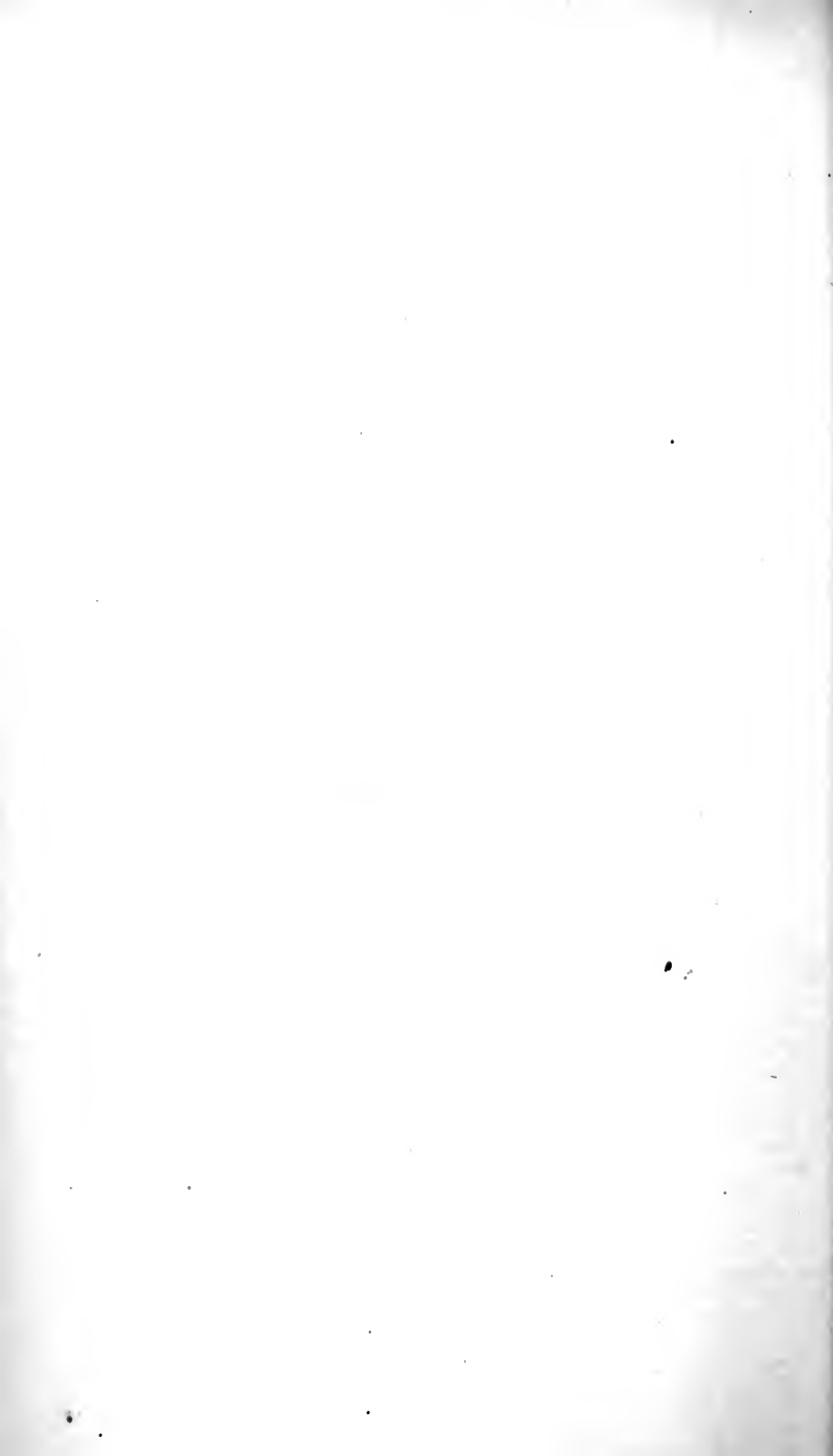
SEMI-ANNUAL REPORTS

OF THE

FIVE SUSPENDED SAVINGS BANKS,

JUNE 30th, 1878.

[Arranged in the order of their suspension.]



REPORTS OF SUSPENDED SAVINGS BANKS.

MASONIC SAVINGS AND LOAN BANK—SAN FRANCISCO.

[Incorporated November 4th, 1869.]

L. E. PRATT, President.

H. T. GRAVES, Cashier.

	Statement July 21, 1878.
<i>Resources.</i>	
Real estate by foreclosure	\$152,700 00
Loans on real estate	807,783 56
Loans on stocks, bonds, and warrants	53,950 00
Loans on other securities	231,110 00
Money on hand	50,401 03
Deposits in other banks and places	2,051 05
Office furniture, fixtures, and safes	5,825 48
Interest accrued	117,319 91
Internal revenue tax (refund allowed)	2,484 42
Total resources	\$1,423,625 45
<i>Liabilities.</i>	
Capital stock paid in	\$148,693 14
Reserve fund	50,921 65
Due depositors	1,161,095 37
Contingent dividends	40,440 06
Mortgage tax	945 35
Surplus	21,529 88
Total liabilities	\$1,423,625 45

DETAILS FROM LAST SEMI-ANNUAL REPORT, JULY 21ST, 1878.

The amount of capital stock is \$300,000; amount subscribed is \$150,000, divided into 1,500 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$148,693 14.

The names of the Directors and the number of shares held by each are as follows:

Leonidas E. Pratt	115 5-13 shares.	Wm. T. Garratt	115 5-13 shares.
William H. Culver	100 shares.	Frank Eastman	115 5-13 shares.
C. H. Wetherbee	5 5-13 shares.	Peter Dean	15 5-13 shares.
George Robins	115 5-13 shares.	James Simpson	5 5-13 shares.
Francis Smith	115 5-13 shares.	J. K. C. Hobbs	115 5-13 shares.
John F. Snow	115 5-13 shares.		
H. T. Graves	115 5-13 shares.	Total held by Directors	1,164 8-13 shares.
Jonathan Kittredge	115 5-13 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
San Francisco	\$80,705 67	\$98,200 00
Alameda	13,702 65	22,500 00
Solano	17,077 24	20,000 00
Marin	10,919 08	12,000 00
Totals	\$122,404 64	\$152,700 00

MASONIC SAVINGS AND LOAN BANK—Continued.

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
San Francisco.....	\$670,477 12	Marin.....	\$1,000 00
Alameda.....	42,500 00	Santa Clara.....	5,000 00
Solano.....	43,755 59	San Joaquin.....	12,000 00
Napa.....	18,000 00	Total.....	\$807,783 56
Sonoma.....	5,050 85		
Tehama.....	10,000 00		

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
First mortgage bonds Spring Valley Water-works Company.....	\$20,000 00	\$25,000 00
First mortgage bonds Oakland Railroad Company.....	30,000 00	40,000 00
Stock of the Masonic Hall Association of San Francisco.....	3,950 00	7,000 00
Totals.....	\$53,950 00	\$72,000 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Certificates of indebtedness of the United States, the par value of which is \$296,455 19.....	\$224,500 00	Unknown.
Life insurance policies.....	3,760 00	Unknown.
Pass-books of this bank.....	2,750 00	\$11,436 00
Diamonds.....	100 00	400 00
Totals.....	\$231,110 00	-----

DEPOSITS IN OTHER BANKS.

First National Bank of New York.....	\$2,051 05
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FARMERS' AND MECHANICS' BANK OF SAVINGS—SAN FRANCISCO.

[Incorporated —, 18—.]

HENRY DUTTON, President.

L. G. HARVEY, Cashier.

	Statement June 30, 1878.
<i>Resources.</i>	
Real estate owned.....	\$104,571 41
Loans on real estate.....	140,925 96
Invested in stocks.....	14,970 28
Loans on stocks and bonds.....	51,250 00
Loans on other securities.....	18,012 97
Loans on personal security.....	163,136 14
Money on hand.....	82,107 35
Office furniture, fixtures, and safes.....	3,770 02
Expenses, taxes, etc.....	7,166 95
Total resources.....	\$585,911 08
<i>Liabilities.</i>	
Capital stock paid in.....	\$60,000 00
Reserve fund.....	8,185 14
Due depositors.....	432,262 72
Other liabilities.....	62,750 00
Gross earnings for term.....	22,713 22
Total liabilities.....	\$585,911 08

DETAILS FROM SEMI-ANNUAL REPORT, JUNE 30TH, 1878.

The amount of capital stock is \$150,000, divided into 1,500 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$60,000, being \$40 per share.

The names of the Directors and the number of shares held by each are as follows:

Henry Dutton.....	150 shares.	Abner Doble.....	50 shares.
William Ede.....	150 shares.	John Blair.....	150 shares.
N. W. Spaulding.....	50 shares.	L. G. Harvey.....	150 shares.
Charles Clayton.....	1 share.		
Geo. W. Swan.....	150 shares.	Total number held by Directors..	1,001 shares.
Isaac E. Davis.....	150 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
San Francisco.....	\$17,353 09	\$19,022 22
San Mateo.....	3,160 07	3,160 07
Santa Cruz.....	15,550 25	15,550 25
Monterey.....	38,262 50	40,000 00
Marin.....	2,796 00	3,500 00
Solano.....	963 09	963 09
Contra Costa.....	26,486 41	26,486 41
Totals.....	\$104,571 41	\$108,682 04

FARMERS' AND MECHANICS' BANK OF SAVINGS—Continued.

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
San Francisco -----	\$84,210 28	Solano -----	\$9,549 59
Alameda -----	4,145 50	Marin -----	1,040 00
Santa Clara -----	12,530 00	El Dorado -----	13,062 00
San Joaquin -----	8,896 35		
Contra Costa -----	7,492 24	Total -----	\$140,925 96

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
449 shares of stock of this bank -----	\$10,000 00	\$17,960 00
500 shares Amador Canal Company's stock -----	4,970 28	6,000 00
Totals -----	\$14,970 28	\$23,960 00

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
85 shares People's Ice Company's stock -----	\$1,100 00	\$2,550 00
510 shares California Fruit Growing Association -----	3,650 00	7,650 00
150 shares stock of this bank -----	1,500 00	6,000 00
598 shares Placerville Water Company's stock -----	12,000 00	25,000 00
1980 shares El Dorado Water Company's stock -----		
125 bonds Amador Canal Company (second mortgage) \$1,000 each -----	33,000 00	125,000 00
Totals -----	\$51,250 00	\$166,200 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Deed to 160 acres of land and insurance -----	\$9,200 00	\$12,000 00
Trustees' order Swamp Land District No. 50 -----	2,221 00	2,221 00
Trustees' order Swamp Land District No. 107 -----	6,291 97	6,870 00
Warehouse receipt (4 cases of organs) -----	300 00	800 00
Totals -----	\$18,012 97	\$21,891 00

LA SOCIÉTÉ FRANÇAISE D'ÉPARGNES ET DE PRÉVOYANCE MUTUELLE—SAN FRANCISCO.

[Incorporated February 1st, 1860; reincorporated April 11th, 1870.]

G. DUSSOL,
President June 30th, 1878.
G. TOUCHARD,
President December 31st, 1878.

G. MAHÉ,
Director General and Secretary June 30th, 1878.
A. BRAND,
Secretary December 31st, 1878.

	Statement June 30, 1878.
<i>Resources.</i>	
Real estate by foreclosure	\$1,183,726 28
Loans on real estate	3,188,341 42
Invested in bonds	135,500 00
Loans on stocks and bonds	1,424,894 61
Loans on other securities	100,000 00
Money on hand	131,776 29
Deposits in other banks and places	375,536 56
Office furniture, fixtures, and safes	6,375 19
Total resources	\$6,546,090 35
<i>Liabilities.</i>	
Reserve fund	\$280,963 05
Due depositors	6,250,822 68
Building fund	14,304 62
Total liabilities	\$6,546,090 35

DETAILS FROM SEMI-ANNUAL REPORT, JUNE 30TH, 1878.

This is a "mutual association," and has no capital stock.

The names of the Directors on the 30th of June, 1878, were as follows: G. Dussol, A. Pavilier, C. Martin, J. J. Rey, L. Barbat, P. Huerne, J. Roth, Ch. Tencé, and J. Caire.

The names of the present Directors are as follows: Gve. Touchard, Al. Weil, Paul Rousset, T. LeRoy, H. Casanova, Fr. Perrin, Emile Grisar, Jos. Godchaux, and E. G. Lyons.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value
San Francisco	\$1,183,726 28	\$1,460,000 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
Alameda	\$534,658 36	Napa	\$101,666 66
Sonoma	183,787 00	San Luis Obispo	8,133 32
San Mateo	171,832 02	San Francisco	1,765,264 06
Sacramento	26,500 00	Washington Territory	124,500 00
Marin	247,500 00		
San Joaquin	4,500 00	Total	\$3,188,341 42
Santa Barbara	20,000 00		

LA SOCIÉTÉ FRANCAISE D'ÉPARGNES ET DE PRÉVOYANCE MUTUELLE—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Par Value.
First mortgage bonds Amador Canal Company -----	\$135,500 00	\$150,000 00

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Par Value.
First mortgage bonds of railroad companies -----	\$1,249,047 11	\$2,092,000 00
Canal and water company's stock -----	7,000 00	20,000 00
Stock of Commercial and Woolen Company -----	168,847 50	400,000 00
Totals -----	\$1,424,894 61	\$2,512,000 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Chattel mortgage on two steamboats, insured for \$150,000 00	\$100,000 00	\$250,000 00

DEPOSITS IN OTHER BANKS.

London and San Francisco Bank -----	\$375,536 56
-------------------------------------	--------------

ODD FELLOWS' SAVINGS AND COMMERCIAL BANK—SACRAMENTO.

[Incorporated February 11th, 1875.]

H. G. SMITH, President.

H. K. SNOW, Cashier.

	Statement June 30, 1878.
<i>Resources.</i>	
Real estate by foreclosure.....	\$161,412 08
Loans on real estate.....	362,468 54
Invested in stocks and bonds.....	41,684 70
Loans on stocks, bonds, and warrants.....	100,814 77
Loans on other securities.....	6,671 24
Loans on personal security.....	112,897 16
Money on hand.....	24,584 74
Office furniture, fixtures, and safes.....	7,476 13
Interest accrued.....	13,452 77
Other assets not above enumerated.....	31,166 48
Total resources.....	\$862,628 61
<i>Liabilities.</i>	
Capital stock paid in.....	\$85,400 00
Reserve fund.....	38,399 87
Due depositors.....	693,419 03
Due banks and bankers.....	45,409 71
Total liabilities.....	\$862,628 61

DETAILS FROM SEMI-ANNUAL REPORT, JUNE 30TH, 1878.

The amount of capital stock is \$500,000; the total amount actually paid in by stockholders, for capital stock, is \$85,400, divided into 854 shares of \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

H. G. Smith.....	20 shares.	Chas. Schwartz.....	50 shares.
Edw. Cadwalader.....	30 shares.	Chas. Robin.....	30 shares.
Mike Bryte.....	30 shares.	Adolph Heilbron.....	16 shares.
Chris. Green.....	20 shares.		
D. W. Welty.....	16 shares.	Total number held by Directors.....	212 shares.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Sacramento.....	\$149,064 42	\$209,000 00
San Joaquin.....	2,009 71	1,500 00
Solano.....	10,337 95	12,800 00
Totals.....	\$161,412 08	\$223,300 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
Sacramento.....	\$280,563 54	Butte.....	\$17,500 00
Alameda.....	7,000 00	Yolo.....	4,555 00
Solano.....	42,850 00		
El Dorado.....	10,000 00	Total.....	\$362,468 54

ODD FELLOWS' SAVINGS AND COMMERCIAL BANK—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Sacramento City Water-works certificates-----	\$25,083 95	\$26,504 47
Odd Fellows' Hall stock, Sacramento—902 shares-----	16,600 75	16,456 00
Totals-----	\$41,684 70	\$42,960 47

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
300 shares Odd Fellows' Hall stock, Sacramento-----	\$6,000 00	\$16,300 00
260 shares Odd Fellows' Temple stock, Sacramento-----		
Lincoln County, Nevada, warrants-----	94,814 77	93,019 00
Lincoln County, Nevada, bonds-----		
Totals-----	\$100,814 77	\$109,319 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Judgment against State of California for work done on State Prison at Folsom-----	\$5,768 96	\$7,768 96
Bills of lading, merchandise-----		
Soldiers' land claim, approved at Washington, D. C.-----		
Totals-----	\$6,671 24	\$7,541 96

PROPERTY NOT OTHERWISE ENUMERATED.

Advertising for taxes, and insurance on real estate loans-----	\$3,052 86
Old balance real estate account-----	40 38
Taxes paid-----	5,805 90
Due from firm of B. F. Hastings & Company, Bankers (bankrupt)-----	22,267 34
Total-----	\$31,166 48

Went into liquidation September 21st, 1878.

ODD FELLOWS' SAVINGS BANK—SAN FRANCISCO.

[Incorporated October 13th, 1866.]

MARTIN HELLER, President.

JAMES BENSON, Secretary.

	Statement June 30, 1878.
<i>Resources.</i>	
Real estate by foreclosure	\$565,597 75
Loans on real estate	2,415,394 00
Invested in bonds	180,294 75
Money on hand	18,240 25
Deposits in other banks and places	149,569 07
Office furniture, fixtures, and safes	5,934 96
Other assets not above enumerated	28,573 94
Total resources	\$3,363,604 72
<i>Liabilities.</i>	
Reserve fund	\$39,885 45
Due depositors	3,191,927 50
Balance for dividends, etc.	121,714 87
Other liabilities	10,076 90
Total liabilities	\$3,363,604 72

DETAILS FROM SEMI-ANNUAL REPORT, JUNE 30TH, 1878.

On the mutual plan. No capital stock.

The names of the Directors are as follows: Columbus Bartlett, Colin M. Boyd, Joseph Brandenstein, Henry B. Brooks, G. G. Burnett, John Cammet, Benj. Hagan, Martin Heller, David Hunter, A. S. Iredale, Jno. F. Kennedy, A. H. Lissak, Jr., Chas. Metzler, S. B. Miner, A. W. Scott, Moses Selig, Lewis Soher, A. G. Soule, H. J. Tilden, Cephas Turner, T. K. Wilson, Jos. Winterburn, and Louis Zeh.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Alameda	\$7,009 60	\$7,009 60
Napa	9,624 34	9,624 34
San Francisco	255,542 59	255,542 59
San Mateo	71,301 95	71,301 95
Santa Clara	88,742 08	88,742 08
Santa Cruz	22,081 54	22,081 54
Solano	6,500 00	6,500 00
Sonoma	104,795 65	104,795 65
Totals	\$565,597 75	\$565,597 75

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
San Francisco	\$1,634,629 05	Solano	\$2,013 44
Alameda	59,205 47	Sonoma	70,392 74
Napa	128,393 04	Sutter	365,344 11
San Mateo	89,384 35	Total	\$2,415,394 00
Santa Clara	54,208 72		
Santa Cruz	11,823 08		

ODD FELLOWS' SAVINGS BANK—Continued.

INVESTED IN BONDS.

Class.	Amount Invested.	Market Value.
156 Montgomery Avenue bonds, \$1,000 each -----	\$146,811 42	\$126,360 00
35 City of Marysville bonds, \$1,000 each -----	33,483 33	34,358 33
Totals -----	\$180,294 75	\$160,718 33

DEPOSITS IN OTHER BANKS.

Lazard Frères, San Francisco -----	\$49,653 44
London and San Francisco Bank, San Francisco -----	42,953 88
Bank of California, San Francisco -----	56,961 75
Total -----	\$149,569 07

PROPERTY NOT OTHERWISE ENUMERATED.

Rents secured by chattel mortgage -----	\$1,000 00
Rents due but unpaid -----	2,991 33
Judgments against sundry debtors -----	5,950 43
Promissory notes, where securities exhausted -----	18,632 18
Total -----	\$28,573 94

LIST OF DIRECTORS, ETC., ON THE 31ST DECEMBER, 1878, AFTER INCORPORATION, WITH CAPITAL
 STOCK, AUGUST 7TH, 1878.

MARTIN HELLER, President.

JAMES BENSON, Secretary.

The amount of capital stock is \$250,000; amount subscribed is \$133,500. The total amount actually paid in by stockholders, for capital stock, is \$128,975.

The names of the Directors and the number of shares held by each are as follows:

Martin Heller -----	50 shares.	Chas. Montgomery -----	10 shares.
David Hunter -----	50 shares.	Daniel L. Randolph -----	50 shares.
Columbus Bartlett -----	25 shares.	A. W. Scott -----	12 shares.
Colin M. Boyd -----	12 shares.		
A. H. Lissak, Jr. -----	10 shares.	Total number held by Directors -----	219 shares.

SEMI-ANNUAL REPORTS

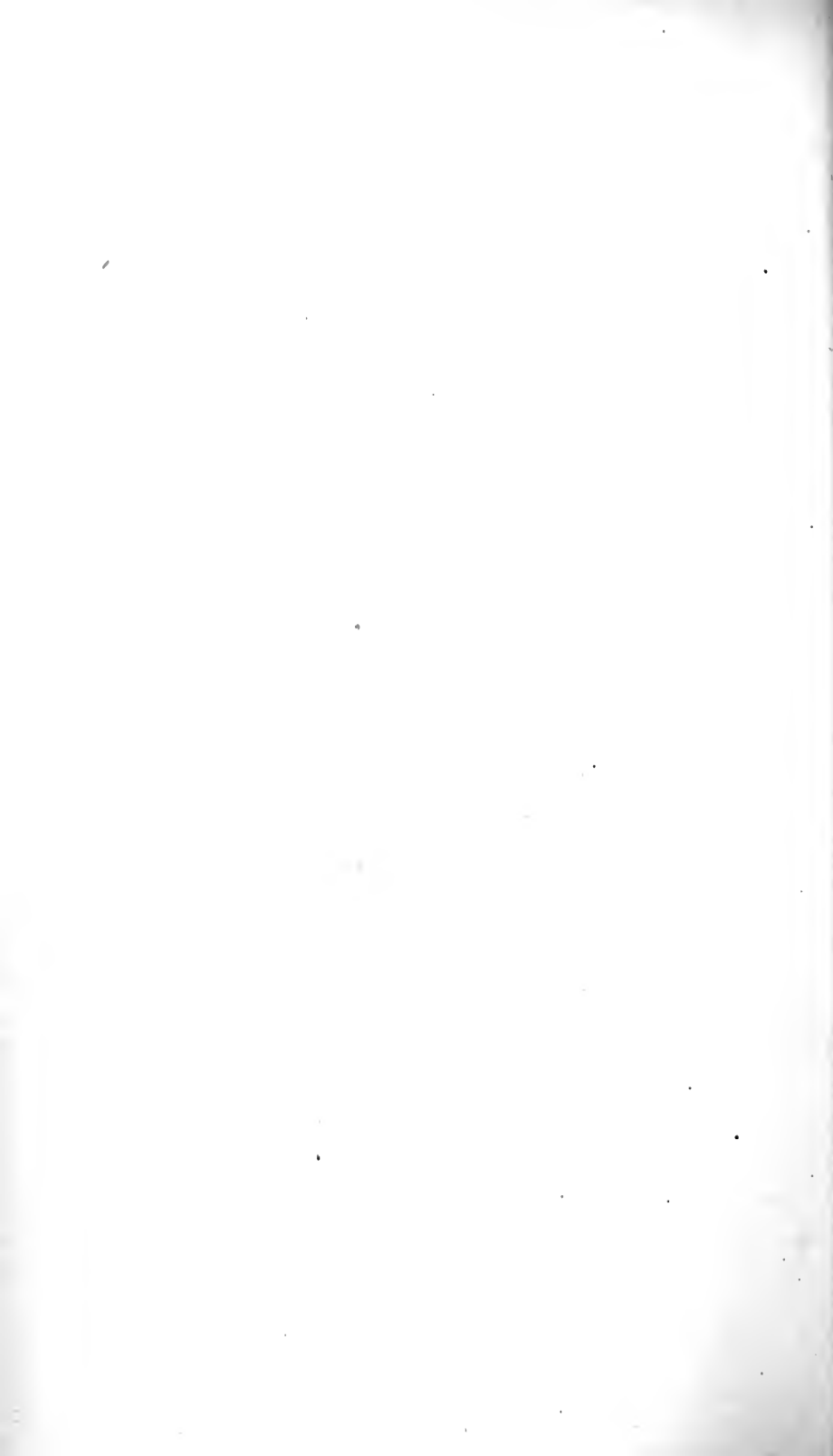
OF THE

COMMERCIAL BANKS,

JUNE 30th AND DECEMBER 31st,

1878.

[The Banks are arranged alphabetically.]



REPORTS OF COMMERCIAL BANKS.

BANK OF ANAHEIM—ANAHEIM.

[Incorporated September 27th, 1876.]

S. H. MOTT, President.

B. F. SEIBERT, Cashier

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Loans on real estate.....	\$16,175 21	\$14,131 21
Loans on stocks and warrants.....	1,385 00	3,562 00
Loans on other securities.....	38,203 14	8,752 08
Loans on personal security.....		16,976 21
Money on hand.....	8,749 08	7,567 50
Deposits in other banks and places.....	3,345 44	
Office furniture, fixtures, and safes.....	4,772 28	4,772 28
Total resources.....	\$72,630 15	\$55,761 28
<i>Liabilities.</i>		
Capital stock paid in.....	\$20,000 00	\$20,000 00
Surplus fund.....	4,700 00	5,729 66
Due depositors.....	33,479 84	24,646 91
Due banks and bankers.....	13,210 52	5,384 71
Undivided profits.....	1,239 79	
Total liabilities.....	\$72,630 15	\$55,761 28

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$100,000: amount subscribed is \$90,000, divided into 900 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$20,000, being \$22 2-9 per share.

The names of the Directors and the number of shares held by each are as follows:

H. Mabury.....	100 shares.	B. F. Seibert.....	100 shares.
E. F. Spence.....	100 shares.	J. F. Hollenbeck.....	100 shares.
O. S. Witherby.....	100 shares.		
S. H. Mott.....	100 shares.	Total number held by Directors.....	700 shares.
A. H. Wileox.....	100 shares.		

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Los Angeles.....	\$14,131 21

BANK OF ANAHEIM—*Continued.*

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Old Fellows' Building Association of Anaheim -----	\$2,002 00	\$2,500 00
Black Star Coal Mining stock -----	1,500 00	4,500 00
Los Angeles County warrants -----	60 00	70 00
Totals -----	\$3,562 00	\$7,070 00

STATISTICAL INFORMATION.

Supplementary to Report of Bank of Anaheim, on the morning of January 1st, 1879.

Total number of depositors -----	154
Number of depositors receiving interest -----	
Amount due depositors bearing interest -----	
Amount due depositors not bearing interest -----	\$23,606 97
Largest amount due any one depositor -----	\$2,833 06
Decrease during the last six months in deposits -----	\$6,115 59
Amount of interest to depositors for last six months -----	
Rate per cent. per annum of such interest -----	
Amount of dividends to stockholders for last six months -----	\$1,200 00
Rate per cent. per annum of same on paid up capital -----	12 per cent.
Amount added to reserve fund last six months -----	\$1,500 00
Expenses (including taxes, \$—) for the last six months -----	\$2,235 22
Amount of net earnings last six months -----	\$1,981 91
Average rate per month of interest charged on loans -----	1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger? -----	Dec. 31st, 1878.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date? -----	7 cents.

THE BANK OF BODIE—BODIE.

[Incorporated August 15th, 1878.]

WM. IRWIN, President.

W. H. POPE, Cashier.

		Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building		\$3,341 03
Loans on real estate		875 00
Loans on other securities		1,100 00
Loans on personal security		28,531 46
Money on hand		12,347 91
Deposits in other banks and places		7,945 33
Office furniture, fixtures, and safes		1,481 64
Total resources		\$55,622 37
<i>Liabilities.</i>		
Capital stock paid in		\$21,000 00
Surplus fund		1,999 50
Due depositors		32,622 87
Total liabilities		\$55,622 37

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31st, 1878.

The amount of capital stock is \$50,000; amount subscribed is \$50,000, divided into 1,000 shares of \$50 each. The total amount actually paid in by stockholders, for capital stock, is \$21,000, being \$21 per share.

The names of the Directors and the number of shares held by each are as follows:

Wm. Irwin	142 85-100 shares.	George Gillson	142 85-100 shares.
F. Wamkee	142 85-100 shares.		
James M. Dawley	142 85-100 shares.	Total held by Directors..	714 25-100 shares.
F. B. Hessel	142 85-100 shares.		

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Mono	\$875 00

LOANED ON OTHER SECURITIES.

	Amount Loaned.	Value of Securities.
Merchandise	\$1,100 00	Not stated.

DEPOSITS IN OTHER BANKS.

In Bank of California	\$7,678 92
In Agency Bank of California, New York	266 41
Total	\$7,945 33

BANK OF BUTTE COUNTY—CHICO.

[Incorporated January 15th, 1873.]

HARMEN BAY, President.

CHAS. FAULKNER, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$31,000 00	\$31,000 00
Real estate by foreclosure	3,500 00	20,255 57
Loans on real estate	53,466 40	86,565 00
Invested in stocks and warrants		967 00
Loans on stocks		35,927 00
Loans on other securities		2,738 00
Loans on personal security	435,281 25	291,148 87
Money on hand	26,490 73	39,101 42
Deposits in other banks and places		887 05
Office furniture, fixtures, and safes	3,900 41	3,900 41
Total resources	\$553,638 79	\$512,490 32
<i>Liabilities.</i>		
Capital stock paid in	\$250,000 00	\$250,000 00
Surplus fund	13,002 57	19,619 21
Due depositors	177,080 07	164,747 60
Due banks and bankers	94,882 86	78,123 51
Undivided profits	18,673 29	
Total liabilities	\$553,638 79	\$512,490 32

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$250,000; amount subscribed is \$250,000, divided into 2,500 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$250,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

N. D. Rideout	685 shares.	Chas. Faulkner	425 shares.
Geo. C. Perkins	400 shares.		
Harmen Bay	170 shares.		
Aug. H. Chapman	200 shares.		
		Total held by Directors	1,880 shares.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Butte	\$20,255 57	\$24,500 00
Totals	\$20,255 57	\$24,500 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Butte	\$46,915 00
Colusa	22,150 00
Total	\$69,065 00

BANK OF BUTTE COUNTY—*Continued.*

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
20 shares Chico Fire Engine Incorporation -----	\$200 00	\$200 00
Butte County warrants -----	767 00	767 00
Totals -----	\$967 00	\$967 00

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Chico Gas and Water Companies' stock -----	\$33,867 00	\$37,740 00
Spring Valley Mining Company's stock—125 shares -----	2,000 00	2,000 00
Chico Fire Engine Incorporation -----	60 00	60 00
Totals -----	\$35,927 00	\$39,800 00

LOANED ON OTHER SECURITIES.

	Amount Loaned.	Value of Securities.
Wheat in warehouse -----	\$2,738 00	\$3,000 00
Totals -----	\$2,738 00	\$3,000 00

DEPOSITS IN OTHER BANKS.

Due from American Exchange National Bank, New York -----	\$887 05
--	----------

BANK OF CALIFORNIA—SAN FRANCISCO.

[Incorporated June 30th, 1866.]

WILLIAM ALVORD, President.

THOMAS BROWN, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building.....	\$350,000 00	\$350,000 00
Real estate by foreclosure.....	447,877 74	460,645 87
Loans on real estate.....	1,365,320 57	1,118,056 64
Invested in stocks and bonds.....	85,000 00	85,000 00
Loans on stocks, bonds, and warrants.....	831,063 53	1,079,385 15
Loans on other securities.....	249,306 65	94,955 00
Loans on personal security.....	4,682,782 02	5,376,936 19
Money on hand.....	2,062,995 15	1,755,050 43
Deposits in other banks and places.....	332,628 24	397,797 17
Total resources.....	\$10,406,973 90	\$10,717,826 45
<i>Liabilities.</i>		
Capital stock paid in.....	\$5,000,000 00	\$5,000,000 00
Surplus fund.....	555,932 53	385,196 67
Due depositors.....	4,544,061 40	5,181,557 93
Due banks and bankers.....	310,979 97	151,071 85
Total liabilities.....	\$10,406,973 90	\$10,717,826 45

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$5,000,000, divided into 50,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$5,000,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

D. O. Mills.....	2,250 shares.	Chas. Mayne.....	675 shares.
Thos. Bell.....	250 shares.	H. W. Carpentier.....	3,311 shares.
Wm. Sharon.....	612 shares.	Calvin Paige.....	500 shares.
Wm. Alvord.....	250 shares.	Jerome Lincoln.....	1,580 shares.
C. Adolphe Low.....	250 shares.		
Adam Grant.....	400 shares.	Total held by Directors.....	13,578 shares.
E. J. Baldwin.....	3,500 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
San Francisco.....	\$218,876 59	\$213,500 00
Sonoma.....	28,574 67	20,000 00
Fresno.....	167,685 10	170,000 00
Alameda.....	5,020 00	5,000 00
State of Illinois.....	15,837 80	15,000 00
Taxes, expenses, costs, etc., on above.....	24,651 71	-----
Totals.....	\$460,645 87	\$423,500 00

BANK OF CALIFORNIA—*Continued.*

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
San Francisco-----	\$389,659 70	Alameda, Fresno, Kern,	
Alameda-----	13,807 50	Merced, Napa, Solano, etc.	\$550,001 43
Santa Barbara-----	4,000 00	Arizona Territory-----	568 35
Marin and San Francisco-----	11,500 00	St. Louis, Mo.-----	81,826 01
Los Angeles-----	20,000 00	Storey County, Nevada-----	6,923 04
San Mateo-----	39,770 61	Total-----	\$1,118,056 64

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Oregon Central Railroad Company (preferred bonds)-----	\$75,000 00	\$65,000 00
Spring Valley Water Company's stock-----	10,000 00	9,000 00
Totals-----	\$85,000 00	\$74,000 00

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Shares of incorporated mining companies-----	\$617,506 23	\$900,000 00
Spring Valley Water Company's bonds-----	125,000 00	150,000 00
Stockton City bonds-----	17,183 67	15,000 00
Dupont Street bonds-----	2,000 00	3,000 00
Stock of California incorporations (other than mining companies)-----	116,300 00	150,000 00
Stock of Oregon Land Company-----	28,404 61	50,000 00
Stock of Virginia and Truckee Railroad Company-----	110,000 00	300,000 00
State and county warrants-----	62,990 64	100,000 00
Totals-----	\$1,079,385 15	\$1,668,000 00

LOANED ON OTHER SECURITIES.

	Amount Loaned.	Value of Securities.
Warehouse receipts-----	\$37,655 00	\$45,000 00
Bullion-----	40,000 00	50,000 00
Contracts, etc.-----	17,300 00	21,000 00
Totals-----	\$94,955 00	\$116,000 00

DEPOSITS IN OTHER BANKS.

Due from foreign banks and bankers-----	\$187,448 66
Tremont National Bank, Boston-----	23,580 62
Agency Bank of California, New York-----	186,767 89
Totals-----	\$397,797 17

BANK OF CHICO—CHICO.

[Incorporated December 26th, 1872.]

JOHN CONLY, President.

A. H. CREW, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building-----	\$15,599 52	\$15,599 52
Real estate by foreclosure-----		37,868 23
Loans on real estate-----	172,350 46	142,662 14
Invested in bonds-----		46,418 75
Loans on stocks and bonds-----		47,602 70
Loans on other securities-----		2,955 89
Loans on personal security-----	424,949 01	238,407 24
Money on hand-----	39,766 33	107,168 59
Office furniture, fixtures, and sales-----	6,362 00	5,000 00
Interest accrued-----	37,180 62	11,501 59
Total resources-----	\$696,207 94	\$655,184 65
<i>Liabilities.</i>		
Capital stock paid in-----	\$356,300 00	\$356,300 00
Surplus fund-----	25,016 10	7,823 36
Due depositors-----	233,974 71	240,961 50
Due banks and bankers-----	80,917 13	50,099 79
Total liabilities-----	\$696,207 94	\$655,184 65

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$500,000; amount subscribed is \$356,300, divided into 5,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$356,300, being \$71 26 per share.

The names of the Directors and the number of shares held by each are as follows:

John Conly-----	468 shares.
Orrin Gowell-----	675 shares.
A. H. Crew-----	625 shares.

Total number held by Directors----- 1,768 shares.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Butte-----	\$37,868 23	\$44,100 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
Butte-----	\$106,054 87	Sutter-----	\$3,000 00
Colusa-----	31,845 80	Total-----	\$142,662 14
Tehama-----	1,761 47		

BANK OF CHICO—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.
Tulare County bonds	\$26,418 75
United States bonds	20,000 00
Total	\$46,418 75

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.
Plumas County bonds	\$10,000 00
Napa County bonds	5,000 00
Bank stock	32,602 70
Total	\$47,602 70

LOANED ON OTHER SECURITIES.

	Amount Loaned.	Value of Securities.
Certificates of deposit	\$555 00	\$1,980 00
Wheat in warehouse	2,400 89	3,000 00
Totals	\$2,955 89	\$4,980 00

STATISTICAL INFORMATION.

Supplementary to Report of Bank of Chico, on the morning of January 1st, 1879.

Total number of depositors	382
Number of depositors receiving interest	185
Amount due depositors receiving interest	\$134,675 33
Amount due depositors not receiving interest	\$90,204 43
Largest amount due any one depositor	\$14,000 00
Decrease during the last six months in deposits	\$1,181 94
Amount of interest to depositors for last six months	\$6,060 38
Rate per cent. per annum of such interest	8½ per cent.
Amount of dividends to stockholders for last six months (paid July 16th, 1878, for previous quarter)	None.
Rate per cent. per annum of same on paid up capital	Nothing.
Amount added to reserve fund last six months	\$7,823 36
Expenses (including taxes, \$1,515 63) for the last six months	\$7,414 60
Amount net earnings last six months	
Average rate per month of interest charged on loans	1¼ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Dec. 31st, 1878.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

CITIZENS' BANK—NEVADA CITY.

[Incorporated September 21st, 1876.]

E. M. PRESTON, President.

JOHN T. MORGAN, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building-----	\$6,000 00	\$6,000 00
Real estate by foreclosure-----	489 41	3,150 66
Loans on real estate-----	2,000 00	7,292 22
Invested in stocks and warrants-----	16,356 58	36,921 93
Loans on stocks-----	2,215 45	1,502 50
Loans on personal security-----	45,963 18	49,060 45
Money on hand-----	13,986 14	10,889 55
Deposits in other banks and places-----	5,647 03	22 68
Office furniture, fixtures, and safes-----	4,000 00	4,475 00
Other assets not above enumerated-----	7,144 14	1,060 84
Total resources-----	\$103,801 93	\$120,375 83
<i>Liabilities.</i>		
Capital stock paid in-----	\$50,000 00	\$50,000 00
Surplus fund-----	6,455 00	1,240 97
Due depositors-----	47,324 93	58,494 30
Due banks and bankers-----	22 00	10,640 56
Total liabilities-----	\$103,801 93	\$120,375 83

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$200,000; amount subscribed is \$200,000, divided into 2,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$50,000, being \$25 per share.

The names of the Directors and the number of shares held by each are as follows:

E. M. Preston-----	504 9-100 shares.	Geo. M. Hughes-----	1 53-100 shares.
John T. Morgan-----	656 28-100 shares.	T. W. Sigourney-----	1 2-100 shares.
R. M. Hunt-----	12 3-100 shares.		
R. McMurray-----	1 share.	Total held by Directors-----	1,179 22-100 shares.
Niles Searls-----	3 27-100 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Nevada-----	\$3,150 66	\$4,200 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Nevada-----	\$7,292 22

CITIZENS' BANK—*Continued.*

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Nevada County warrants	\$23,977 85	\$24,352 85
26 shares Nevada and Mountain Lake Ice Company's stock	864 00	1,040 00
700 shares Keystone Mining Company's stock	730 08	1,000 00
227 shares Nevada County Narrow Gauge Railroad Company	11,350 00	Not stated.
Total	\$36,921 93	Not stated.

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Nevada County mining stocks	\$1,502 50	Not stated.

PROPERTY NOT OTHERWISE ENUMERATED.

Horse and buggy	\$418 71
Gold bullion	452 13
London exchange	190 00
Total	\$1,060 84

STATISTICAL INFORMATION.

Supplementary to Report of Citizens' Bank, on the morning of January 1st, 1879.

Total number of depositors	129
Number of depositors receiving interest	None.
Amount due depositors bearing interest	None.
Amount due depositors not bearing interest	\$58,494 00
Largest amount due any one depositor	\$4,750 00
Increase during the last six months in deposits	\$7,387 00
Amount of interest to depositors for last six months	None.
Rate per cent. per annum of such interest	0 per cent.
Amount of dividends to stockholders for last six months	0
Rate per cent. of same on paid up capital	0 per cent.
Amount added to reserve fund last six months	0
Expenses (including taxes, \$337 10) for the last six months	\$3,453 41
Amount net earnings last six months	\$762 58
Average rate per month of interest charged on loans	1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Dec. 31st, 1878.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

COLUSA COUNTY BANK—COLUSA.

[Incorporated September 15th, 1870.]

W. F. GOAD, President.

W. P. HARRINGTON, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building.....	\$16,573 48	\$19,944 36
Real estate by foreclosure.....	7,927 68	8,507 98
Loans on real estate.....	353,277 66	340,877 82
Invested in county warrants.....	2,016 23	6,284 44
Loans on stocks and warrants.....	48,446 12	725 00
Loans on other securities.....	15,718 46	20,807 13
Loans on personal security.....	346,336 97	213,373 92
Money on hand.....	50,671 40	68,833 75
Deposits in other banks and places.....	3,609 51	49,095 54
Office furniture, fixtures, and safes.....	2,053 48	2,489 43
Other assets not above enumerated.....		1,807 09
Accrued interest not included December 31, 1878, \$52,700 06.		
Total resources.....	\$846,630 99	\$732,746 46
<i>Liabilities.</i>		
Capital stock paid in.....	\$400,000 00	\$500,000 00
Surplus fund.....	101,367 95	
Due depositors.....	251,558 61	223,700 82
Due banks and bankers.....	39,733 30	6,365 72
Other liabilities.....	53,971 13	2,679 92
Total liabilities.....	\$846,630 99	\$732,746 46

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$500,000; amount subscribed is \$500,000, divided into 5,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$500,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

W. F. Goad.....	743 shares.	J. H. Jewett.....	271 shares.
Geo. Hagar.....	653 shares.		
John Boggs.....	62½ shares.	Total number held by Directors..	2,461 shares.
Edgar Mills.....	731½ shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Colusa.....	\$8,507 98	\$9,400 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Colusa.....	\$332,377 82
Tehama.....	8,500 00
Total.....	\$340,877 82

COLUSA COUNTY BANK—*Continued.*

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Colusa County road and school warrants	\$6,284 44	\$6,284 44

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Colusa County warrants	\$725 00	\$725 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Grain in warehouse	\$20,807 13	\$37,299 68

DEPOSITS IN OTHER BANKS.

Due from foreign banks and bankers	\$3,818 28
National Gold Bank, D. O. Mills & Company, Sacramento	45,277 26
Total	\$49,095 54

STATISTICAL INFORMATION.

Supplementary to Report of Colusa County Bank, on the morning of January 1st, 1879.

Total number of depositors	194	
Number of depositors receiving interest	None.	
Amount due depositors bearing interest	Nothing.	
Amount due depositors not bearing interest	\$223,700 82	
Largest amount due any one depositor (exclusive of county funds)	\$5,659 16	
Decrease in deposits during the last six months	\$27,837 79	
Amount of interest to depositors for last six months	Nothing.	
Rate per cent. per annum of such interest	None.	
Amount of dividends to stockholders for last six months	}	*
Rate per cent. per annum of same on paid up capital		
Amount added to reserve fund last six months		
Expenses (including taxes, \$4,249 74) for the year ending April 30th, 1879	\$15,750 81	
Amount of net earnings last six months	*	
Average rate per month of interest charged on loans	1½ per cent.	
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Dec. 31st, 1878.	
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.	

*The sum of \$100,000 was capitalized on December 12th, 1878, from the surplus accrued during a period of nearly two years preceding.

COMMERCIAL BANK OF SAN DIEGO—SAN DIEGO.

[Incorporated October, 1872.]

H. MABURY, President.

J. A. FAIRCHILD, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$20,879 69	\$20,879 69
Real estate by foreclosure	7,585 35	8,511 87
Loans on real estate	44,349 26	57,283 87
Invested in stocks, bonds, and warrants	20,480 67	8,978 65
Loans on stocks, bonds, and warrants	500 00	13,120 20
Loans on other securities	26,934 36	46,678 99
Loans on personal security	108,447 66	76,827 55
Money on hand	22,194 31	25,322 10
Deposits in other banks and places	3,720 93	10,546 46
Office furniture, fixtures, and safes	4,848 66	4,848 66
Other assets not above enumerated	641 85	805 87
Total resources	\$260,582 74	\$273,803 91
<i>Liabilities.</i>		
Capital stock paid in	\$75,000 00	\$75,000 00
Due depositors	172,394 60	193,162 28
Due banks and bankers	9,926 14	1,305 61
Undivided profits	3,262 00	4,336 02
Total liabilities	\$260,582 74	\$273,803 91

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$200,000; amount subscribed is \$75,000, divided into 2,000 shares of \$37 50 each. The total amount actually paid in by stockholders, for capital stock, is \$75,000, being \$37 50 per share.

The names of the Directors and the number of shares held by each are as follows:

Hiram Mabury	400 shares.	J. S. Harbison	45 shares.
Levi Chase	60 shares.	N. H. Conklin	10 shares.
J. G. Capron	130 shares.		—
James McCoy	60 shares.	Total number held by Directors.	
A. S. Witherby	60 shares.		765 shares.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
San Diego	\$8,511 87	\$7,790 40

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
San Diego	\$57,283 87

COMMERCIAL BANK OF SAN DIEGO—*Continued.*

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
San Diego County warrants -----	\$8,978 65	\$10,100 98

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
San Diego County warrants -----	\$6,596 42	\$7,420 97
Los Angeles Water Company's stock -----	340 00	1,200 00
Commercial Bank of Los Angeles stock -----	1,064 00	2,000 00
San Diego City bonds -----	1,500 00	12,000 00
San Diego Water Company's stock -----	500 00	750 00
San Diego Bay Land Company's stock -----	3,119 78	5,000 00
Totals -----	\$13,120 20	\$28,370 97

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Warehouse receipts and bills of lading -----	\$25,922 91	\$37,000 00
San Diego County warrants and warehouse receipts -----	20,756 08	20,756 08
Totals -----	\$46,678 99	\$57,756 08

DEPOSITS IN OTHER BANKS.

Due from First National Bank, New York -----	\$5,382 63
Pacific Bank, San Francisco -----	5,122 81
San José Savings Bank -----	41 02
Total -----	\$10,546 46

PROPERTY NOT OTHERWISE ENUMERATED.

Bullion in vault -----	\$805 87
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STATISTICAL INFORMATION.

Supplementary to Report of Commercial Bank of San Diego, on the morning of January 1st, 1879.

Total number of depositors -----	387
Number of depositors receiving interest -----	86
Amount due depositors bearing interest -----	\$91,304 75
Amount due depositors not bearing interest -----	\$101,857 53
Largest amount due any one depositor -----	\$18,671 00
Increase during the last six months in deposits -----	\$20,767 68
Amount of interest to depositors for last six months -----	\$5,252 01
Rate per cent. per annum of such interest -----	9.88 per cent.
Amount of dividends to stockholders for last six months -----	\$4,500 00
Rate per cent. per annum of same on paid up capital -----	12 per cent.
Amount added to reserve fund last six months -----	\$1,901 90
Expenses (including taxes) for the last six months -----	\$5,950 10
Amount of net earnings last six months -----	\$6,401 90
Average rate per month of interest charged on loans -----	1 $\frac{1}{2}$ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger? -----	January 1st, 1879,

and monthly.

What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date? -----

None.

COMMERCIAL BANK OF LOS ANGELES—LOS ANGELES.

[Incorporated September 25th, 1875.]

J. E. HOLLENBECK, President.

E. F. SPENCE, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building-----	\$37,000 00	\$37,000 00
Real estate by foreclosure-----	500 00	500 00
Loans on real estate-----	22,670 00	20,170 00
Invested in county warrants-----	19,250 00	15,701 97
Loans on personal security-----	217,810 77	243,260 77
Money on hand-----	45,012 08	56,356 95
Deposits in other banks and places-----	22,793 37	20,471 58
Office furniture, fixtures, and safes-----	5,380 60	5,380 60
Other assets not above enumerated-----	2,965 11	-----
Total resources-----	\$373,381 93	\$398,841 87
<i>Liabilities.</i>		
Capital stock paid in-----	\$177,000 00	\$177,000 00
Surplus fund-----	20,422 42	18,551 61
Due depositors-----	175,959 51	203,290 26
Total liabilities-----	\$373,381 93	\$398,841 87

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$300,000; amount subscribed is \$177,000, divided into 3,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$177,000, being \$59 per share.

The names of the Directors and the number of shares held by each are as follows:

A. H. Wilcox-----	100 shares.	J. E. Hollenbeck-----	100 shares.
O. S. Witherby-----	100 shares.	W. Woodworth-----	50 shares.
H. Mabury-----	400 shares.	E. F. Spence-----	110 shares.
S. H. Moti-----	50 shares.		
I. Lankersheim-----	20 shares.	Total number held by Directors--	930 shares.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Los Angeles-----	\$500 00	\$500 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Los Angeles-----	\$20,170 00

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Los Angeles City and County bonds and warrants-----	\$15,701 97	\$15,701 97

COMMERCIAL BANK OF LOS ANGELES—*Continued.*

DEPOSITS IN OTHER BANKS.

Due from New York and Chicago banks	\$6,398 78
Due from Pacific Bank, San Francisco	3,692 03
Due from Commercial Bank of San Diego	2,879 67
Due from Bank of California	5,053 11
Due from Bank of Anaheim	2,834 05
Total	\$20,857 64

STATISTICAL INFORMATION.

Supplementary to Report of Commercial Bank of Los Angeles, on the morning of January 1st 1879.

Total number of depositors	770
Number of depositors receiving interest	1
Amount due depositors bearing interest	\$2,680 27
Amount due depositors not bearing interest	\$200,609 99
Largest amount due any one depositor	\$7,260 67
Increase during the last six months in deposits	\$27,330 75
Amount of interest to depositors for last six months	\$107 20
Rate per cent. per annum of such interest	8 per cent.
Amount of dividends to stockholders for last six months	\$10,620 00
Rate per cent. per annum of same on paid up capital	12 per cent.
Amount added to reserve fund last six months	
Expenses (including taxes, &c.—) for the last six months	\$8,834 53
Amount of net earnings last six months	\$9,549 65
Average rate per month of interest charged on loans	About 1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Dec. 20th, 1878.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

BANK OF DIXON—DIXON.

[Incorporated October 30th, 1873.]

J. C. MERRYFIELD, President.

A. J. KASTEN, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$8,226 37	\$8,226 37
Real estate by foreclosure	5,068 40	5,068 40
Loans on real estate	117,311 66	104,395 54
Invested in county warrants		1,801 24
Loans on other securities	1,250 00	12,530 00
Loans on personal security	153,340 88	129,007 97
Money on hand	4,463 74	4,718 50
Deposits in other banks	373 00	789 25
Office furniture, fixtures, and safes	2,255 66	2,255 66
Interest accrued		21,256 87
Other assets not above enumerated	4,055 79	
Total resources	\$296,345 50	\$290,049 80
<i>Liabilities.</i>		
Capital stock paid in	\$133,860 00	\$133,860 00
Surplus fund	9,343 00	15,987 10
Due depositors	110,301 37	83,175 98
Due banks and bankers	42,224 89	48,362 81
Dividends unpaid	616 24	8,663 91
Total liabilities	\$296,345 50	\$290,049 80

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$500,000; amount subscribed is \$223,100, divided into 2,231 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$133,860, being \$60 per share.

The names of the Directors and the number of shares held by each are as follows:

J. C. Merryfield	200 shares.	Henry Peterson	100 shares.
S. G. Little	102 shares.	J. M. Dudley	50 shares.
J. S. Mayes	100 shares.	Total number held by Directors. 752 shares.	
J. S. Garnett	100 shares.		
H. E. McCune	100 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Solano	\$4,201 75	\$5,000 00
Yolo	866 65	600 00
Totals	\$5,068 40	\$5,600 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
Solano	\$87,656 19	Napa	\$500 00
Colusa	11,539 35	Total	\$104,395 54
Fresno	4,000 00		
Yolo	700 00		

BANK OF DIXON—*Continued.*

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Solano County school warrants	\$1,801 24	\$1,801 24

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Wheat in warehouse	\$12,530 00	\$20,000 00

DEPOSITS IN OTHER BANKS.

Bank of Suisun	\$696 75
Capital Savings Bank	92 50
Total	\$789 25

STATISTICAL INFORMATION.

Supplementary to Report of Bank of Dixon, on the morning of January 1st, 1879.

Total number of depositors	169
Number of depositors receiving interest	169
Amount due depositors bearing interest	\$80,950 79
Amount due depositors not bearing interest	None.
Largest amount due any one depositor	\$6,513 00
Decrease during the last six months in deposits	\$29,350 58
Amount of interest to depositors for last six months	\$2,225 19
Rate per cent. per annum of such interest	8 per cent.
Amount of dividends to stockholders for last six months	\$8,031 60
Rate per cent. per annum of same on paid up capital	12 per cent.
Amount added to reserve fund last six months	\$3,133 72
Expenses (including taxes, \$—) for the last six months	\$2,201 20
Amount of net earnings last six months	\$13,390 51
Average rate per month of interest charged on loans	1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Dec. 31st, 1878.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

FARMERS' BANK OF WHEATLAND—WHEATLAND.

[Incorporated October 22d, 1874.]

T. S. EWING, President.

W. W. HOLLAND, Cashier.

	Statement December 31, 1878.
<i>Resources.</i>	
Real estate by foreclosure	\$3,870 84
Loans on real estate	3,900 00
Loans on personal security	66,948 03
Money on hand	4,566 52
Office furniture, fixtures, and safes	1,200 00
Other assets not above enumerated	1,630 39
Total resources	\$82,115 78
<i>Liabilities.</i>	
Capital stock paid in	\$33,500 00
Due depositors	30,944 72
Due banks and bankers	17,671 06
Total liabilities	\$82,115 78

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$250,000; amount subscribed is \$33,500, divided into 1,340 shares of \$25 each. The total amount actually paid in by stockholders, for capital stock, is \$33,500, being \$25 per share.

The names of the Directors and the number of shares held by each are as follows:

T. S. Ewing	320 shares.	Jas. H. Keys	25 shares.
V. G. Bell	150 shares.	Total number held by Directors_ 695 shares.	
A. M. Oakley	160 shares.		
D. H. Haskell	40 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.
Yuba	\$3,870 84

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Yuba	\$2,200 00
Sutter	200 00
Alameda	1,500 00
Total	\$3,900 00

Invested in stocks and bonds	None.
Loaned on stocks and bonds	None.
Loaned on other securities	None.

FARMERS' SAVINGS BANK—LAKEPORT.

[Incorporated December 8th, 1874.]

LINDSEY CARSON, President.

J. W. MACKALL, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$15,983 49	\$16,062 99
Loans on real estate	75,106 10	77,424 71
Invested in county warrants	5,861 31	7,873 53
Loans on other securities		8,229 60
Loans on personal security	36,249 35	24,676 85
Money on hand	12,785 64	12,807 39
Deposits in other banks and places	1,595 02	2,473 22
Office furniture, fixtures, and safes	1,492 25	1,492 25
Total resources	\$148,873 16	\$151,040 54
<i>Liabilities.</i>		
Capital stock paid in	\$56,560 00	\$58,020 00
Surplus fund	10,579 53	11,939 30
Due depositors	81,733 63	81,081 24
Total liabilities	\$148,873 16	\$151,040 54

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$100,000; amount subscribed is \$100,000, divided into 1,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$58,020, being \$58 02 per share.

The names of the Directors and the number of shares held by each are as follows:

H. C. Boggs	410 shares.	George Tucker	11 shares.
Wm. Stonebraker	5 shares.	Lindsey Carson	5 shares.
D. T. Taylor	5 shares.		
D. V. Thompson	5 shares.	Total number held by Directors ..	451 shares.
R. S. Johnson	10 shares.		

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Lake	\$77,323 31
Sonoma	101 40
Total	\$77,424 71

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Lake County warrants	\$6,817 32	\$7,873 52

NOTE.—This is really a commercial bank, and not a savings bank, as its name would indicate.

FARMERS' AND MERCHANTS' BANK OF LOS ANGELES— LOS ANGELES.

[Incorporated February 12th, 1871.]

ISAIAS W. HELLMAN, President.

JOHN MILNER, Secretary.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building-----	\$18,000 00	\$18,000 00
Real estate by foreclosure-----	11,518 70	10,518 70
Loans on real estate-----	333,645 00	354,971 84
Invested in stocks, bonds, and warrants-----	5,974 69	33,684 15
Loans on stocks, bonds, and warrants-----	25,500 00	61,150 00
Loans on other securities-----	64,349 56	-----
Loans on personal security-----	402,926 26	254,031 98
Money on hand-----	119,157 73	180,822 70
Deposits in other banks and places-----	65,359 17	13,011 41
Office furniture, fixtures, and safes-----	8,614 80	8,614 80
Total resources-----	\$1,055,045 91	\$934,805 58
<i>Liabilities.</i>		
Capital stock paid in-----	\$475,000 00	\$475,000 00
Surplus fund-----	50,000 00	50,000 00
Due depositors-----	501,966 46	360,774 00
Due banks and bankers-----	-----	13,895 56
Undivided profits-----	28,079 45	35,136 02
Total liabilities-----	\$1,055,045 91	\$934,805 58

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$500,000; amount subscribed is \$500,000, divided into 500 shares of \$1,000 each. The total amount actually paid in by stockholders, for capital stock, is \$475,000, being \$950 per share.

The names of the Directors and the number of shares held by each are as follows:

Isaias W. Hellman-----	200 shares.	José Mascarel-----	10 shares.
O. W. Childs-----	75 shares.	C. E. Thom-----	10 shares.
John S. Griffin-----	20 shares.		
L. C. Goodwin-----	20 shares.	Total number held by Directors--	355 shares.
Frank Lecouvreur-----	20 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Los Angeles-----	\$10,518 70	\$11,700 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Los Angeles-----	\$354,971 84

FARMERS' AND MERCHANTS' BANK OF LOS ANGELES—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Los Angeles City bonds	\$3,600 00	\$3,600 00
Los Angeles County warrants	30,084 15	31,117 34
Totals	\$33,684 15	\$34,717 34

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
43 shares Farmers' and Merchants' Bank stock	\$24,000 00	\$43,000 00
20 shares Farmers' and Merchants' Bank stock and other collaterals	32,000 00	52,000 00
225 shares Los Angeles City Water Company's stock	4,500 00	6,000 00
50 shares Capital Savings Bank, Sacramento, stock	650 00	2,500 00
Totals	\$61,150 00	\$103,500 00

DEPOSITS IN OTHER BANKS.

Agency Bank of California, New York	\$613 48
First National Gold Bank, San Francisco	6 11
Bank of California, San Francisco	12,391 82
Total	\$13,011 41

STATISTICAL INFORMATION.

Supplementary to Report of Farmers' and Merchants' Bank, on the morning of January 1st, 1879.

Total number of depositors	677
Number of depositors receiving interest	104
Amount due depositors bearing interest	\$61,305 42
Amount due depositors not bearing interest	\$299,468 58
Largest amount due any one depositor	\$6,198 43
Decrease during the last six months in deposits	\$141,192 46
Amount of interest to depositors for last six months	\$1,430 46
Rate per cent. per annum of such interest	7 per cent.
Amount of dividends to stockholders for last six months	\$25,000 00
Rate per cent. per annum of same on paid up capital	10.52 per cent.
Amount added to reserve fund last six months—surplus	\$9,451 25
Expenses (including taxes, \$3,433 97) for the last six months (\$10,004 68)	\$13,438 65
Amount of net earnings last six months	\$32,889 90
Average rate per month of interest charged on loans	1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Each day.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

FARMERS' AND MECHANICS' BANK—HEALDSBURG.

[Incorporated September 1st, 1877.]

E. H. BARNES, President.

R. H. WARFIELD, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building, safe, and fixtures	\$8,999 66	\$9,018 41
Loans on real estate	40,000 00	70,551 50
Loans on stocks		5,586 00
Loans on personal security	45,775 87	81,475 13
Money on hand	6,108 43	14,754 10
Deposits in other banks and places	7,279 10	11,749 23
Expenses, etc.		2,299 99
Total resources	\$108,163 06	\$195,434 36
<i>Liabilities.</i>		
Capital stock paid in	\$51,680 00	\$70,970 00
Due depositors	54,196 10	118,074 58
Due banks and bankers	437 38	
Gross earnings	1,849 58	6,389 78
Total liabilities	\$108,163 06	\$195,434 36

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$200,000; amount subscribed is \$134,100, divided into 1,341 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$70,970, being \$52 92 per share.

The names of the Directors and the number of shares held by each are as follows:

E. H. Barnes	100 shares.	R. Powell	50 shares.
A. B. Nalley	100 shares.	G. H. Jacobs	30 shares.
L. A. Norton	150 shares.		
A. Hasset	10 shares.	Total number held by Directors.	480 shares.
A. C. Bledsoe	40 shares.		

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Sonoma	\$70,551 50

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Stock of Bank of Healdsburg and of the Grangers' Business Association	\$5,586 00	\$15,000 00

DEPOSITS IN OTHER BANKS.

Due from foreign banks and bankers	\$109 93
London and San Francisco Bank, San Francisco	6,627 99
Santa Rosa Bank	3,575 57
Bank of Sonoma County	1,485 74
Total	\$11,749 23

FARMERS' AND MECHANICS' BANK—Continued.

STATISTICAL INFORMATION.

Supplementary to Report of Farmers' and Mechanics' Bank, on the morning of January 1st, 1879.

Total number of depositors	250
Number of depositors receiving interest	90
Amount due depositors bearing interest	\$30,552 00
Amount due depositors not bearing interest	\$87,522 58
Largest amount due any one depositor	\$23,000 00
Increase during the last six months in deposits	\$63,878 48
Amount of interest to depositors for last six months	\$487 29
Rate per cent. per annum of such interest—average	6½ per cent.
Amount of dividends to stockholders for last six months	\$2,571 06
Rate per cent. per annum of same on paid up capital	12 per cent.
Amount added to reserve fund last six months	
Expenses (including taxes, \$209 10) for the last six months	\$1,667 61
Amount of net earnings last six months	
Average rate per month of interest charged on loans	1 per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	

BANK OF FRESNO—FRESNO.

[Incorporated October 31st, 1876.]

LEWIS LEACH, President.

OTTO FROELICH, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$7,200 00	\$7,204 50
Real estate by foreclosure	2,576 20	3,708 64
Loans on real estate	22,650 00	9,530 00
Invested in stocks and warrants	750 00	2,729 02
Loans on county warrants		619 00
Loans on other securities	190 00	594 00
Loans on personal security	25,932 61	32,837 45
Money on hand	6,368 76	8,311 38
Deposits in other banks and places	9,448 65	2,800 32
Office furniture, fixtures, and safes	847 71	847 71
Other assets not above enumerated	1,904 00	1,705 16
Total resources	\$77,867 93	\$70,887 18
<i>Liabilities.</i>		
Capital stock paid in	\$47,600 00	\$47,600 00
Surplus fund	509 00	1,807 51
Due depositors	27,941 21	20,041 78
Due banks and bankers		551 37
Undivided profits	1,817 72	886 52
Total liabilities	\$77,867 93	\$70,887 18

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$250,000; amount subscribed is \$136,000, divided into 1,360 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$47,600, being \$35 per share.

The names of the Directors and the number of shares held by each are as follows:

J. A. Blasingame	100 shares.	H. C. Daulton	20 shares.
Otto Froelich	100 shares.	J. W. Ferguson	10 shares.
Lewis Leach	75 shares.		
Wm. Faymonville	50 shares.	Total number held by Directors.	385 shares.
Wm. Hugetten	30 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Fresno	\$3,708 64	\$4,900 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Fresno	\$9,530 00

BANK OF FRESNO—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.
Fresno County warrants	\$1,979 02
100 shares Fresno Water Company's stock	750 00
Total	\$2,729 02

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Fresno County warrants	\$619 00	\$691 87

LOANED ON OTHER SECURITIES.

	Amount Loaned.	Value of Securities.
Organ	\$84 00	\$120 00
Pass-books of savings banks	320 00	1,750 00
Gold nugget, etc.	190 00	240 00
Totals	\$594 00	\$2,110 00

DEPOSITS IN OTHER BANKS.

Anglo-Californian Bank, San Francisco	\$2,521 86
San Joaquin Valley Bank, Stockton	278 46
Total	\$2,800 32

PROPERTY NOT OTHERWISE ENUMERATED.

Drafts sent to banks for collection	\$1,705 16
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STATISTICAL INFORMATION.

Supplementary to Report of Bank of Fresno, on the morning of January 1st, 1879.

Total number of depositors	73
Number of depositors receiving interest	8
Amount due depositors bearing interest	\$4,356 75
Amount due depositors not bearing interest	\$15,685 13
Largest amount due any one depositor	\$1,476 66
Average amount of each account open	\$398 34
Increase during the last six months in deposits	
Decrease during the last six months in deposits	\$7,899 33
Amount of interest to depositors for last six months	\$50 96
Rate per cent. per annum of such interest	8 and 9 per cent.
Amount of dividends to stockholders for last six months	\$4,080 00
Rate per cent. of same on paid up capital	8.57 per cent.
Amount added to reserve fund last six months	\$1,298 51
Expenses (including taxes, \$388 50) for the last six months	\$1,664 91
Amount net earnings last six months	\$2,689 25
Average rate of interest charged on loans	1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	No depositors' ledger; balances each week.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	No difference.

BANK OF GILROY—GILROY.

[Incorporated June 5th, 1871.]

L. A. WHITEHURST, President.

GEO. E. HERSEY, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Real estate by foreclosure.....		\$4,000 11
Loans on real estate.....	\$50,543 73	45,346 00
Invested in county warrants.....		2,578 19
Loans on stocks and warrants.....	6,210 28	7,236 94
Loans on other securities.....		12,001 00
Loans on personal security.....	56,209 76	35,880 52
Money on hand.....	11,771 61	13,605 07
Deposits in other banks and places.....	2,266 88	9,064 34
Offices furniture, fixtures, and safes.....	2,151 32	2,151 32
Currency.....	2,122 15	1,925 55
Interest accrued.....	4,040 64	5,261 82
Expense account.....	2,386 67	
Total resources.....	\$137,703 04	\$139,050 86
<i>Liabilities.</i>		
Capital stock paid in.....	\$68,000 00	\$68,000 00
Surplus fund.....	5,319 97	4,467 61
Due depositors.....	59,689 03	63,915 44
Due banks and bankers.....	4,298 42	2,667 81
Other liabilities.....	395 62	
Total liabilities.....	\$137,703 04	\$139,050 86

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$200,000; amount subscribed is \$68,000, divided into 1,360 shares of \$50 each. The total amount actually paid in by stockholders, for capital stock, is \$68,000, being \$50 per share.

The names of the Directors and the number of shares held by each are as follows:

J. H. Ellis.....	200 shares.	W. Tennants.....	60 shares.
W. N. Steuben.....	100 shares.		
L. A. Whitehurst.....	80 shares.	Total number held by Directors.....	525 shares.
G. L. Hoffman.....	85 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Santa Clara.....	\$4,000 11	\$4,000 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
San Benito.....	\$1,600 00	Tulare.....	\$13,000 00
Santa Clara.....	23,325 00		
Los Angeles.....	6,821 00	Total.....	\$45,346 00
San Francisco.....	600 00		

BANK OF GILROY—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Santa Clara County warrants	\$2,578 19	\$2,578 19

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
186 shares Bank of Gilroy	\$6,436 94	\$9,800 00
School warrants and mining stocks	800 00	1,140 00
Totals	\$7,236 94	\$10,940 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Grain in warehouse	\$12,001 00	\$15,000 00

DEPOSITS IN OTHER BANKS.

Sather & Company, San Francisco	\$4,121 19
San José Savings Bank	5,043 15
Total	\$9,064 34

STATISTICAL INFORMATION.

Supplementary to Report of Bank of Gilroy, on the morning of January 1st, 1879.

Total number of depositors	219
Number of depositors receiving interest	144
Amount due depositors bearing interest	\$51,812 34
Amount due depositors not bearing interest	\$12,103 10
Largest amount due any one depositor	\$3,722 71
Increase during the last six months in deposits	\$4,202 16
Amount of interest to depositors for last six months	\$1,527 61
Rate per cent. per annum of such interest { Six months	7 per cent.
{ One year	9 per cent.
(Now 6 per cent. and 8 per cent.)	
Amount of dividends to stockholders for last six months	\$4,080 00
Rate per cent. per annum of same on paid up capital	12 per cent.
Amount added to reserve fund last six months	\$387 61
Expenses for the last six months	\$2,196 98
Amount of net earnings last six months	\$4,467 61
Average rate per month of interest charged on loans	1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Daily.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

GRANGERS' BANK OF CALIFORNIA—SAN FRANCISCO.

[Incorporated April 27th, 1874.]

G. W. COLBY, President.

A. MONTPELLIER, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building [*]	\$38,400 00	\$77,000 00
Real estate by foreclosure.....	8,889 42	4,067 95
Loans on real estate.....	60,363 08	65,677 83
Loans on stocks.....	55,000 00	52,000 00
Loans on other securities.....	72,430 50	140,000 00
Loans on personal security.....	352,200 37	129,303 87
Money on hand.....	35,261 06	43,707 44
Deposits in other banks and places.....	819 71	3,376 93
Office furniture, fixtures, and safes.....	2,697 05	2,826 30
Interest accrued.....		13,337 59
Other assets not above enumerated.....		14,725 21
Total resources.....	\$626,061 19	\$546,023 12
<i>Liabilities.</i>		
Capital stock paid in.....	\$385,000 00	\$394,380 00
Due depositors.....	184,958 14	102,269 52
Mortgage on bank premises.....	20,000 00	40,000 00
Other liabilities.....	36,103 05	9,373 60
Total liabilities.....	\$626,061 19	\$546,023 12

* The bank owned one-third on June 30th, 1878, and two-thirds on December 31st, 1878.

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31st, 1878.

The amount of capital stock is \$2,500,000; amount subscribed is \$984,500, divided into 9,845 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$394,380, being \$40 per share.

The names of the Directors and the number of shares held by each are as follows:

C. S. Abbott.....	14 shares.	J. C. Merryfield.....	42 shares.
G. W. Colby.....	151 shares.	I. C. Steele.....	70 shares.
C. J. Cressey.....	5 shares.	F. J. Woodward.....	5 shares.
Thos. Fowler.....	30 shares.	J. V. Webster.....	18 shares.
A. D. Logan.....	1,981 shares.		
John Lewelling.....	572 shares.	Total held by Directors.....	2,956 shares.
Thos. McConnell.....	68 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Solano.....	\$4,067 95	\$6,000 00

GRANGERS' BANK OF CALIFORNIA--*Continued.*

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
Alameda	\$1,800 00	Sonoma	\$5,750 00
Butte	16,507 25	Stanislaus	7,820 00
Colusa	8,707 75	San Francisco	4,750 00
Contra Costa	1,550 00	Tulare	1,000 00
Inyo	1,055 83	Tehama	600 00
Kern	4,637 00	Washoe, State of Nevada	1,000 00
Merced	2,800 00		
Solano	4,700 00	Total	\$65,677 83

LOANED ON STOCKS.

Class.	Amount Loaned.	Market Value.
Stock of the Grangers' Bank	\$52,000 00	\$100,000 00

LOANED ON OTHER SECURITIES.

	Amount Loaned.	Value of Securities.
Wheat in warehouse	\$75,000 00	\$110,000 00
Land warrants and assignments of mortgages	65,000 00	100,000 00
Totals	\$140,000 00	\$210,000 00

DEPOSITS IN OTHER BANKS.

Importers' and Traders' National Bank of New York	\$2,645 26
Bank of Modesto	731 67
Total	\$3,376 93

PROPERTY NOT OTHERWISE ENUMERATED.

Sundry items	\$14,725 21
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STATISTICAL INFORMATION.

Supplementary to Report of Grangers' Bank, on the morning of January 1st, 1879.

Number of depositors receiving interest	67
Amount due to depositors bearing interest	\$25,837 36
Increase during the last six months in deposits	\$2,094 40
Amount of interest to depositors for last six months	\$1,265 67
Rate per cent. per annum of such interest	6,7, and 8 per cent.
Amount of dividends to stockholders for last twelve months	\$35,877 00
Rate per cent. per annum of same on paid up capital	10 per cent.
Amount added to reserve fund last six months	
Expenses (including taxes, \$2,016 27) for the last six months	\$7,517 45
Amount of net earnings last six months	\$18,726 76
Average rate per month of interest charged on loans	1 and 1 $\frac{1}{4}$ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Dec. 31st, 1878.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

BANK OF HEALDSBURG—HEALDSBURG.

[Incorporated June 13th, 1874.]

JONAS BLOOM, President.

JNO. N. BAILLIACHE, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Real estate by foreclosure.....	\$3,821 26	\$3,836 26
Loans on real estate.....	57,502 30	60,653 75
Invested in stocks.....	5,000 00	5,000 00
Loans on personal security.....	\$6,231 26	110,465 29
Money on hand.....	5,713 58	16,320 95
Deposits in other banks and places.....		215 89
Office furniture, fixtures, and safes.....	\$3,480 25	3,480 25
Total resources.....	\$161,748 65	\$199,972 39
<i>Liabilities.</i>		
Capital stock paid in.....	\$100,000 00	\$100,000 00
Surplus fund.....	4,273 86	6,180 75
Due depositors.....	45,545 20	38,862 75
Due banks and bankers.....	11,887 09	54,863 89
Other liabilities.....	42 50	65 00
Total liabilities.....	\$161,748 65	\$199,972 39

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$100,000; amount subscribed is \$100,000, divided into 1,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$100,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

Jno. N. Bailhache.....	170 shares.	H. M. Willson.....	29 shares.
Jonas Bloom.....	120 shares.		
Jno. D. Hassett.....	30 shares.	Total number held by Directors.....	439 shares.
William Mulligan.....	90 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Sonoma.....	\$3,836 26	\$3,000 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Sonoma.....	\$60,653 75

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
50 shares of this bank's stock.....	\$5,000 00	\$5,000 00

BANK OF HEALDSBURG—Continued.

DEPOSITS IN OTHER BANKS.

Lazard Frères, San Francisco	\$215 89
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STATISTICAL INFORMATION.

Supplementary to Report of Bank of Healdsburg, on the morning of January 1st, 1879.

Total number of depositors	140
Number of depositors receiving interest	60
Amount due depositors bearing interest	\$20,000 00
Amount due depositors not bearing interest	\$18,900 00
Largest amount due any one depositor	\$3,680 00
Increase during the last six months in deposits	\$8,000 00
Amount of interest to depositors for last six months	\$900 00
Rate per cent. per annum of such interest	6, 7, and 8 per cent.
Amount of dividends to stockholders for last six months	\$4,500 00
Rate per cent. per annum of same on paid up capital	9 per cent.
Amount added to reserve fund last six months	\$1,907 00
Expenses (including taxes, \$500) for the last six months	\$2,553 00
Amount of net earnings last six months	\$6,180 00
Average rate per month of interest charged on loans	1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

BANK OF HOLLISTER—HOLLISTER.

[Incorporated October 21st, 1873.]

T. S. HAWKINS, President.

J. J. BOWEN, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building.....	\$9,009 40	\$9,026 65
Real estate by foreclosure.....	6,920 55	6,903 30
Loans on real estate.....	138,204 98	166,602 10
Invested in warrants.....	5,805 08	8,464 43
Loans on stocks and warrants.....	3,161 14	6,371 48
Loans on other securities.....	18,794 30	55,824 53
Loans on personal security.....	94,846 47	66,982 05
Money on hand.....	13,310 17	22,757 52
Deposits in other banks and places.....	814 57	3,174 00
Office furniture, fixtures, and safes.....	3,709 69	3,709 69
Other assets not above enumerated.....	3,090 49	-----
Total resources.....	\$297,766 84	\$349,815 75
<i>Liabilities.</i>		
Capital stock paid in.....	\$152,090 00	\$152,090 00
Surplus fund.....	503 05	31,284 17
Due depositors.....	127,394 88	142,916 39
Due banks and bankers.....	12,304 91	23,525 19
Other liabilities.....	5,474 00	-----
Total liabilities.....	\$297,766 84	\$349,815 75

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$300,000; amount subscribed is \$227,000, divided into 2,270 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$152,090, being \$67 per share.

The names of the Directors and the number of shares held by each are as follows:

T. S. Hawkins.....	300 shares.	Thos. Rea.....	100 shares.
N. C. Briggs.....	120 shares.		
Thos. Flint.....	100 shares.	Total number held by Directors.....	870 shares.
Uriah Wood.....	250 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
San Benito.....	\$6,903 30	\$6,903 30

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
San Benito.....	\$166,602 10

BANK OF HOLLISTER—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
San Benito County warrants	\$7,765 99	\$7,765 99
San Benito County school orders	556 44	556 44
Town of Hollister warrants	142 00	142 00
Totals	\$8,464 43	\$8,464 43

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Bank of Hollister stock	\$5,051 48	\$8,000 00
San Benito County warrants	1,320 00	1,708 75
Totals	\$6,371 48	\$9,708 75

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Grain in warehouse	\$55,684 53	\$83,526 79
Certificates of deposit	140 00	140 00
Totals	\$55,824 53	\$83,666 79

DEPOSITS IN OTHER BANKS.

San José Savings Bank	\$3,174 00
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STATISTICAL INFORMATION.

Supplementary to Report of Bank of Hollister, on the morning of January 1st, 1879.

Total number of depositors	275
Number of depositors receiving interest	149
Amount due depositors bearing interest	\$87,498 53
Amount due depositors not bearing interest	\$55,417 86
Largest amount due any one depositor	\$9,000 00
Increase during the last six months in deposits	\$15,521 51
Amount of interest to depositors for last six months	\$5,359 96
Rate per cent. per annum of such interest	6, 8, and 10 per cent.
Amount of dividends to stockholders for last twelve months, applied to payment of stock*	\$29,510 00
Rate per cent. per annum of same on paid up capital	19.4 per cent.
Amount added to reserve fund last six months	\$1,319 27
Expenses (including taxes, \$1,210 47) for the last six months	\$2,942 08
Amount of net earnings last twelve months, including accrued interest—debit and credit	\$25,663 97
Average rate per month of interest charged on loans	1½, 1¼, and 1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Dec. 31st, 1878.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	\$42 90
(No discrepancy has previously occurred, and this was not sought out for want of time.)	

* A portion of this was of course earnings of a previous year.

HUMBOLDT COUNTY BANK—EUREKA.

[Incorporated February 27th, 1873.]

CHAS. W. LONG, President.

W. M. HUNTOON, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot	\$5,117 77	\$5,718 52
Real estate by foreclosure	11,169 06	12,467 24
Loans on real estate	105,388 75	101,123 41
Invested in county warrants	664 34	7,784 28
Loans on other securities		4,426 28
Loans on personal security	56,193 77	49,844 39
Money on hand	27,926 77	38,378 02
Deposits in other banks and places	2,052 13	21,502 45
Office furniture, fixtures, and safes	2,393 01	2,393 01
Interest accrued	18,988 06	22,093 98
Other assets not above enumerated	294 45	82 40
Total resources	\$230,188 11	\$265,813 98
<i>Liabilities.</i>		
Capital stock paid in	\$60,000 00	\$60,000 00
Surplus fund	101,260 24	113,274 85
Due depositors	64,198 00	83,779 92
Due banks and bankers	2,920 15	
Other liabilities	1,809 72	8,759 21
Total liabilities	\$230,188 11	\$265,813 98

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$200,000; amount subscribed is \$200,000, divided into 2,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$60,000, being \$30 per share.

The names of the Directors and the number of shares held by each are as follows:

Joseph Russ	120 shares.	W. M. Huntoon	200 shares.
H. H. Buhne	100 shares.	John A. Watson	20 shares.
Thos. Walsh	200 shares.	I. Cullberg	20 shares.
J. W. Henderson	50 shares.		
Wm. Carson	150 shares.	Total number held by Directors	930 shares.
C. W. Long	70 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Humboldt	\$18,185 76	\$17,457 97

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Humboldt	\$101,123 41

HUMBOLDT COUNTY BANK—*Continued.*

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Humboldt County warrants	\$6,747 79	\$6,747 79
Eureka City warrants	1,036 49	1,036 49
Totals	\$7,784 28	\$7,784 28

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Certificate of deposit, Bank of Napa	\$2,000 00	\$2,000 00
Drafts on Bank of California	2,426 28	2,426 28
Totals	\$4,426 28	\$4,426 28

DEPOSITS IN OTHER BANKS.

Due from eastern banks and bankers	\$9,830 57
Bank of California, San Francisco	11,671 88
Total	\$21,502 45

PROPERTY NOT OTHERWISE ENUMERATED.

Gold dust	\$82 40
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STATISTICAL INFORMATION.

Supplementary to Report of Humboldt County Bank, on the morning of January 1st, 1879.

Total number of depositors	156
Number of depositors receiving interest	98
Amount due depositors bearing interest	\$38,148 07
Amount due depositors not bearing interest	\$45,631 85
Largest amount due any one depositor	\$8,958 82
Increase during the last six months in deposits	\$19,581 92
Amount of interest to depositors for last six months	\$1,124 12
Rate per cent. per annum of such interest (now reduced to 6 per cent.)	8 per cent.
Amount of dividends to stockholders for last six months	None.
Expenses (including taxes, \$1,138 91) for the last six months	\$3,931 37
Amount of net earnings last six months	\$12,014 61
Average rate per month of interest charged on loans	1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	January 1st, 1879.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

KERN VALLEY BANK—BAKERSFIELD.

[Incorporated February 24th, 1874.]

S. JEWETT, President.

CHAS. W. FORE, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building-----	\$2,771 17	\$2,771 17
Real estate by foreclosure-----	14,325 17	14,141 97
Loans on real estate-----	55,555 46	46,595 79
Invested in county warrants-----	6,304 09	25,128 79
Loans on stocks-----	2,586 97	3,386 27
Loans on personal security-----	46,654 28	39,129 25
Money on hand-----	25,346 88	6,473 73
Deposits in other banks and places-----	749 81	2,654 44
Office furniture, fixtures, and safes-----	3,755 14	3,755 14
Interest accrued-----	6,551 52	8,383 58
Other assets not above enumerated-----	1,994 00	1,099 20
Total resources-----	\$166,594 49	\$153,519 33
<i>Liabilities.</i>		
Capital stock paid in-----	\$46,450 00	\$50,309 00
Surplus fund-----	1,708 95	2,952 12
Due depositors-----	59,915 50	32,056 01
Due banks and bankers-----	58,520 04	63,202 20
Other liabilities-----		5,000 00
Total liabilities-----	\$166,594 49	\$153,519 33

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$250,000; amount subscribed is \$245,500, divided into 500 shares of \$500 each. The total amount actually paid in by stockholders, for capital stock, is \$50,309, being \$100 62 per share.

The names of the Directors and the number of shares held by each are as follows:

Solomon Jewett-----	75 shares.	Samuel L. Cutter-----	5 shares.
F. Roper-----	10 shares.	F. A. Tracy-----	10 shares.
Jno. Funk-----	10 shares.		
J. Weil-----	3 shares.	Total number held by Directors.	113 shares.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Kern-----	\$14,141 97	\$14,973 60

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Kern-----	\$46,595 79

KERN VALLEY BANK—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Kern County warrants	\$25,128 79	{ Same and interest.

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
6 shares Pioneer Ditch and Irrigating Company	\$1,493 42	\$1,560 00
21 shares Kern Valley Bank	1,500 00	2,226 00
50 shares Kern River Water and Irrigating Company	392 85	500 00
Totals	\$3,386 27	\$4,286 00

DEPOSITS IN OTHER BANKS.

Wells, Fargo & Company, New York	\$1,421 52
First National Gold Bank, San Francisco	1,232 92
Total	\$2,654 44

PROPERTY NOT OTHERWISE ENUMERATED.

Tax notes	\$358 02
Suit in foreclosure	741 18
Total	\$1,099 20

STATISTICAL INFORMATION.

Supplementary to Report of Kern Valley Bank, on the morning of January 1st, 1879.

Total number of depositors	120
Number of depositors receiving interest	22
Amount due depositors bearing interest	\$10,096 00
Amount due depositors not bearing interest	\$21,960 01
Largest amount due any one depositor	\$2,400 00
Average amount of each deposit account open	\$210 24
Decrease during the last six months in deposits	\$27,859 49
Amount of interest to depositors for last six months	\$753 85
Rate per cent. per annum of such interest	9 per cent.
Amount of dividends to stockholders for last six months	\$2,742 00
Rate per cent. per annum of same on paid up capital	11.7 per cent.
Amount added to reserve fund last six months	\$1,143 90
Expenses (including taxes, \$391 33) for last six months	\$2,617 85
Amount net earnings last six months	\$3,885 90
Average rate per month of interest charged on loans	1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Dec. 31st, 1878.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	\$11,449 36

BANK OF LAKE—LAKEPORT.

[Incorporated March 10th, 1874.]

A. F. TATE, President.

FRANK D. TUNIS, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building.....	\$10,000 00	\$10,010 37
Real estate by foreclosure.....	15,300 00	15,466 26
Loans on real estate.....	62,491 12	69,172 03
Invested in county warrants.....	5,472 40	12,291 39
Loans on county warrants.....		1,774 39
Loans on other securities.....		3,622 65
Loans on personal security.....	60,384 40	39,025 07
Money on hand.....	8,686 30	16,546 48
Deposits in other banks and places.....		32 85
Office furniture, fixtures, and safes.....		2,000 00
Total resources.....	\$162,334 22	\$169,941 49
<i>Liabilities.</i>		
Capital stock paid in.....	\$98,341 85	\$98,180 00
Surplus fund.....	5,754 02	6,624 81
Due depositors.....	36,385 34	52,431 77
Due banks and bankers.....	19,353 01	10,816 84
Other liabilities.....	2,500 00	1,888 10
Total liabilities.....	\$162,334 22	\$169,941 49

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$100,000; amount subscribed is \$98,680, divided into 986.8 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$98,180, being \$99 50 per share.

The names of the Directors and the number of shares held by each are as follows:

A. F. Tate.....	9 shares.	B. F. Harbine.....	39 5-10 shares.
A. Levy.....	22 shares.	C. Hartson.....	5 5-10 shares.
G. H. White.....	5 5-10 shares.	Chas. Goodwin.....	21 shares.
Samuel Morrison.....	7 shares.	R. K. Nichols.....	6 6-10 shares.
E. Barry.....	5 5-10 shares.		
S. K. Welsch.....	5 5-10 shares.	Total held by Directors.....	127 1-10 shares.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Lake.....	\$15,466 26	\$17,769 39

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Lake.....	\$69,172 03

BANK OF LAKE—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Lake County warrants.....	\$12,291 39	\$12,291 39

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Lake County warrants.....	\$1,170 14	\$1,500 00
Plumas County school bonds	604 25	2,900 00
Totals.....	\$1,774 39	\$4,400 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Chattel mortgages on steamboat, printing office, etc.	\$2,615 15	\$4,500 00
Wheat in warehouse.....	1,007 50	1,500 00
Totals.....	\$3,622 65	\$6,000 00

BANK OF LA PORTE—LA PORTE.

[Incorporated October —, 1871.]

DIXON BRABBAN, President.

SIMEON WHEELER, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$3,000 00	\$3,000 00
Loans on real estate		27,757 16
Loans on other securities	42,452 76	
Loans on personal security	14,471 07	20,435 72
Money on hand	3,391 47	2,543 50
Deposits in other banks and places	3,050 24	
Office furniture, fixtures, and safes	1,000 00	1,000 00
Total resources	\$67,365 54	\$54,736 38
<i>Liabilities.</i>		
Capital stock paid in	\$12,500 00	\$12,500 00
Surplus fund	11,190 31	5,365 73
Due depositors	43,675 23	25,243 74
Due banks and bankers		11,626 91
Total liabilities	\$67,365 54	\$54,736 38

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$50,000; amount subscribed is \$50,000, divided into 500 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$12,500, being \$25 per share.

The names of the Directors and the number of shares held by each are as follows:

Dixon Brabban	250 shares.
S. Wheeler	249 shares.
G. G. Clough	1 share.

Total number held by Directors 500 shares.

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Sierra	\$18,561 17
Plumas	8,795 99
Napa	400 00
Total	\$27,757 16

STATISTICAL INFORMATION.

Supplementary to Report of Bank of La Porte, on the morning of January 1st, 1879.

Total number of depositors	11
Number of depositors receiving interest	6
Amount due depositors bearing interest	\$18,440 96
Amount due depositors not bearing interest	\$8,311 98
Largest amount due any one depositor	\$14,078 44
Decrease during the last six months in deposits	\$130 83
Amount of interest to depositors for last six months	\$360 55
Rate per cent. per annum of such interest	10 and 12 percent.
Amount of dividends to stockholders for last six months	

BANK OF LA PORTE—Continued.

Rate per cent. per annum of same on paid up capital	
Amount added to reserve fund last six months	\$6,617 80
Expenses (including taxes, \$—) for the last six months	\$1,252 07
Amount of net earnings last six months	\$5,365 73
Average rate per month of interest charged on loans	1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	

BANK OF MARTINEZ—MARTINEZ.

[Incorporated October 7th, 1873.]

L. I. FISH, President.

W. M. HALE, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$5,034 00	\$5,034 00
Loans on real estate	95,690 86	94,614 70
Invested in county warrants	40,411 10	52,211 47
Loans on stocks and warrants	4,043 59	5,659 13
Loans on other securities		14,614 70
Loans on personal security	96,725 07	70,055 34
Money on hand	7,976 79	32,721 72
Deposits in other banks and places	4,510 63	11,239 95
Office furniture, fixtures, and safes	2,149 00	2,499 00
Total resources	\$256,541 04	\$288,650 01
<i>Liabilities.</i>		
Capital stock paid in	\$100,000 00	\$100,000 00
Surplus fund	19,316 73	22,029 02
Due depositors	126,223 03	153,728 19
Undivided profits	8,712 29	10,650 66
Other liabilities	2,288 99	2,242 14
Total liabilities	\$256,541 04	\$288,650 01

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$100,000; amount subscribed is \$100,000, divided into 1,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$100,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

L. I. Fish	125 shares.	H. M. Hale	100 shares.
B. Fernandez	100 shares.		
S. Blum	108 shares.	Total number held by Directors.	533 shares.
W. M. Hale	100 shares.		

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Contra Costa	\$94,614 70

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Contra Costa County warrants	\$52,211 47	\$52,211 47

BANK OF MARTINEZ—Continued.

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Contra Costa County warrants	\$5,659 13	\$6,500 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Personal property	\$155 27	\$100 00
Grain in warehouse	14,459 43	21,689 19
Totals	\$14,614 70	\$21,789 19

DEPOSITS IN OTHER BANKS.

Anglo-Californian Bank, San Francisco	\$11,239 95
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STATISTICAL INFORMATION.

Supplementary to Report of Bank of Martinez, at Martinez, on the morning of January 1st, 1879.

Total number of depositors	210
Number of depositors receiving interest	122
Amount due depositors bearing interest	\$96,603 01
Amount due depositors not bearing interest	\$54,367 72
Largest amount due any one depositor	\$8,923 98
Increase during the last six months in deposits	\$30,941 91
Amount of interest to depositors for last six months	\$3,867 31
Rate per cent. per annum of such interest	8 per cent.
Amount of dividends to stockholders for last six months	\$6,000 00
Rate per cent. per annum of same on paid up capital	12 per cent.
Amount added to reserve fund last six months	\$4,650 66
Expenses (including taxes, \$1,415 33) for the last six months, and salaries, \$1,290	\$3,016 73
Amount of net earnings last six months	\$10,650 66
Average rate per month of interest charged on loans	1 per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Keep none.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	

MENDOCINO DISCOUNT BANK—MENDOCINO CITY.

[Incorporated December 22d, 1871.]

EUGENE BROWN, President.

WM. HEESER, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Loans on real estate		\$3,620 70
Invested in county warrants		817 83
Loans on personal security	\$3,383 59	2,464 00
Money on hand	41 51	
Deposits in other banks and places	3,559 15	
Office furniture, fixtures, and safe	90 00	80 00
Other assets not above enumerated	46 00	4,658 16
Total resources	\$7,120 25	\$11,640 69
<i>Liabilities.</i>		
Capital stock paid in	\$6,440 00	\$8,920 00
Surplus fund	43 20	93 41
Due depositors	637 05	1,987 00
Due banks and bankers		640 28
Total liabilities	\$7,120 25	\$11,640 69

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$30,000; amount subscribed is \$8,920, divided into 446 shares of \$20 each. The total amount actually paid in by stockholders, for capital stock, is \$8,920, being \$20 per share.

The names of the Directors and the number of shares held by each are as follows:

Wm. Heeser	4 shares.	P. G. Palmstream	1 share.
Augustus Heeser	1 share.	Silas Coombs	25 shares.
Chas. W. Denslow	20 shares.		
Eugene Brown	1 share.	Total number held by Directors ..	53 shares.
Ruel Stickney	1 share.		

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Mendocino	\$3,620 70

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Mendocino County warrants	\$541 29	\$541 29
Mendocino County school warrants	276 54	276 54
Totals	\$817 83	\$817 83

PROPERTY NOT OTHERWISE ENUMERATED.

Unmatured drafts in hands of San Francisco agent for collection	\$4,658 16
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MENDOCINO DISCOUNT BANK—Continued.

STATISTICAL INFORMATION.

Supplementary to Report of Mendocino Discount Bank, on the morning of January 1st, 1879.

Total number of depositors	27
Number of depositors receiving interest	27
Amount due depositors bearing interest	\$1,987 00
Amount due depositors not bearing interest	
Largest amount due any one depositor	\$561 32
Increase during the last six months in deposits	\$1,349 95
Amount of interest to depositors for last six months	\$26 92
Rate per cent. per annum of such interest	10 4-5 per cent.
Amount of dividends to stockholders for last six months	\$561 84
Rate per cent. per annum of same on paid up capital	13½ per cent.
Amount added to reserve fund last six months	\$34 88
Expenses (including taxes, \$4 41) for the last six months (loss on furniture, \$10)	\$375 86
Amount of net earnings last six months	\$638 97
Average rate per month of interest charged on loans	1¼ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Dec. 31st, 1878.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

MERCED BANK—MERCED.

[Incorporated April 2d, 1875.]

SAMUEL C. BATES, President.

B. J. RALSTON, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$11,150 78	\$11,221 14
Real estate by foreclosure	320 36	2,604 93
Loans on real estate	30,533 65	32,557 30
Invested in county warrants	554 56	998 30
Loans on stocks		356 13
Loans on other securities		150 00
Loans on personal security	52,509 71	42,596 02
Money on hand	6,795 03	5,707 19
Office furniture, fixtures, and safes	2,403 78	2,403 78
Interest accrued	8,642 96	
Other assets not above enumerated	462 52	835 93
Total resources	\$113,373 35	\$99,430 72
<i>Liabilities.</i>		
Capital stock paid in	\$62,900 00	\$51,180 00
Surplus fund	2,380 34	9,359 43
Due depositors	36,137 02	34,330 41
Due banks and bankers	1,519 43	3,094 48
Dividends unpaid	1,793 60	1,466 40
Other liabilities	8,642 96	
Total liabilities	\$113,373 35	\$99,430 72

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$200,000; amount subscribed is \$63,975. The total amount actually paid in by stockholders, for capital stock, is \$51,180.

The names of the Directors and the number of shares held by each are as follows:

J. M. Montgomery	100 shares.	T. M. Kennan	80 shares.
S. C. Bates	40 shares.	P. Carroll	20 shares.
Jno. Ruddle	40 shares.		
A. Simon	40 shares.	Total number held by Directors ..	320 shares.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Merced	\$2,604 93	\$2,500 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Merced	\$8,273 65
Fresno	24,283 65
Total	\$32,557 30

MERCED BANK—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Merced County warrants.....	\$998 30	\$998 30

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Stock of this bank.....	\$356 13	\$1,050 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Grain in warehouse.....	\$150 00	\$250 00

PROPERTY NOT OTHERWISE ENUMERATED.

Stationery	\$244 05
Litigation account	591 88
Total.....	\$835 93

MODESTO BANK—MODESTO.

[Incorporated October 28th, 1878.]

A. L. CRESSEY, President.

L. B. WALTHALL, Cashier.

	Statement Decem- ber 31, 1878.
<i>Resources.</i>	
Loans on real estate	\$2,858 00
Invested in county warrants.....	1,716 73
Loans on stocks	651 25
Loans on other securities.....	153,644 75
Loans on personal security	75,700 09
Money on hand.....	18,154 81
Deposits in other banks and places.....	106 79
Interest accrued	3,900 44
Other assets not above enumerated.....	93 94
Total resources.....	\$256,818 80
<i>Liabilities.</i>	
Due depositors	\$93,108 52
Due banks and bankers	163,664 02
Other liabilities	46 26
Total liabilities.....	\$256,818 80

NOTE.—At the date of this report the process of transferring the business of the Farmers' Savings Bank of Stanislaus County to the Modesto Bank was going on. See Commissioners' Examination for later information.

DETAILS FROM SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$250,000; amount subscribed is \$246,600, divided into 2,466 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is nothing at this date.

The names of the Directors and the number of shares held by each are as follows:

A. L. Cressey	228 shares.	Caleb Dorsey	62 shares.
L. B. Walthall	206 shares.	Isaac Perkins	55 shares.
S. P. Rogers	190 shares.		—
Robert McHenry	177 shares.	Total number held by Directors.....	998 shares.
Wm. Ensten	80 shares.		

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Stanislaus	\$2,850 00

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Warrants of Stanislaus and Merced Counties.....	\$1,716 73	\$1,716 73

MODESTO BANK—*Continued.*

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
18 shares Farmers' Savings Bank of Stanislaus County -----	\$461 25	\$1,188 00
5 shares Graungers' Bank of California -----	190 00	175 00
Totals -----	\$651 25	\$1,363 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Grain in warehouse -----	\$153,644 75	Not stated.

DEPOSITS IN OTHER BANKS.

Sacramento Savings Bank -----	\$106 79
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PROPERTY NOT OTHERWISE ENUMERATED.

Currency, expense, etc. -----	\$93 94
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MONO COUNTY BANK—BODIE.

[Incorporated October 10th, 1877.]

O. H. LAGRANGE, President.

H. F. HASTINGS, Cashier.

	Statement Decem- ber 31, 1878.
<i>Resources.</i>	
Invested in county warrants.....	\$2,331 30
Loans on stocks.....	3,607 87
Loans on personal security.....	8,727 62
Money on hand.....	14,440 41
Deposits in other banks and places.....	4,186 33
Office furniture, fixtures, and safes.....	1,029 55
Other assets not above enumerated.....	1,555 72
Total resources.....	\$35,878 80
<i>Liabilities.</i>	
Capital stock paid in.....	\$17,000 00
Surplus fund.....	1,723 50
Due depositors.....	17,155 30
Total liabilities.....	\$35,878 80

DETAILS FROM SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$100,000; amount subscribed is \$97,000. The total amount actually paid in by stockholders, for capital stock, is \$17,000, divided into 170 shares of \$100 each.

The names of the Directors and the number of shares subscribed for by each are as follows:

F. K. Bechtel.....	40 shares.	H. F. Hastings.....	1 share.
O. H. Lagrange.....	100 shares.	Total number held by Directors. 261 shares.	
B. B. Minor.....	100 shares.		
S. B. Smith.....	20 shares.		

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Mono County warrants.....	\$2,331 30	\$2,331 30

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Mining stocks.....	\$3,607 87	-----

DEPOSITS IN OTHER BANKS.

Anglo-Californian Bank, San Francisco.....	\$1,948 26
Wells, Fargo & Company, Carson.....	662 23
New York, Virginia City, and Sacramento.....	1,575 84
Total.....	\$4,186 33

PROPERTY NOT OTHERWISE ENUMERATED.

Internal revenue stamps.....	\$141 00
Gold bars.....	186 64
Rustler Mining Company's checks.....	871 54
Humboldt Mining Company's checks.....	356 54
Total.....	\$1,555 72

BANK OF NAPA—NAPA CITY.

[Incorporated September 4th, 1871.]

C. HARTSON, President.

W. C. WATSON, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources</i>		
Bank lot and building	\$20,000 00	\$20,000 00
Real estate by foreclosure	25,282 26	44,148 75
Loans on real estate	223,386 60	298,412 70
Invested in stocks and warrants	61,263 10	16,928 61
Loans on stocks and warrants	26,974 46	85,068 46
Loans on personal security	263,185 23	125,293 51
Money on hand	31,916 62	36,415 86
Deposits in other banks and places	300 97	1,100 65
Other assets not above enumerated	1,557 61	-----
Total resources	\$653,866 85	\$627,368 54
<i>Liabilities.</i>		
Capital stock paid in	\$250 000 00	\$250,000 00
Surplus fund	63,071 01	71,738 16
Due depositors	321,903 81	273,380 87
Due banks and bankers	17,246 03	31,006 51
Dividends unpaid	1,646 00	1,243 00
Total liabilities	\$653,866 85	\$627,368 54

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31st, 1878.

The amount of capital stock is \$250,000; amount subscribed is \$250,000, divided into 2,500 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$250,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

Peter D. Bailey	50 shares.	E. L. Sullivan	200 shares.
Lyman Chapman	20 shares.	R. H. Sterling	10 shares.
Seneca Ewer	10 shares.	J. M. Thompson	7 shares.
S. C. Hastings	200 shares.	R. B. Woodward	10 shares.
C. Hartson	150 shares.	J. F. Zollner	3 shares.
D. L. Haas	10 shares.	G. Barth	12 shares.
I. N. Larimer	35 shares.	J. M. Mansfield	5 shares.
Jno. M. McPike	10 shares.		
Dr. J. A. Lockwood	35 shares.	Total number held by Directors..	817 shares.
Matthew Shaw	50 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Napa	\$44,148 75	\$52,500 00

BANK OF NAPA—Continued.

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
Napa	\$217,544 82	Fresno	\$6,500 00
Sonoma	2,517 25	State of Texas	12,700 00
Lake	12,650 63		
San Francisco	46,500 00	Total	\$298,412 70

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Stock of this bank	\$726 30	\$726 30
Stock of the Bank of Lake	550 00	550 00
Napa County warrants	15,652 31	16,594 46
Totals	\$16,928 61	\$17,870 76

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Stock of this bank	\$64,209 50	\$78,600 00
Stock of the Vallejo Savings and Commercial Bank	5,964 96	20,000 00
Stock of quicksilver mining companies	4,700 00	4,700 00
County warrants	10,194 00	10,194 00
Totals	\$85,068 46	\$113,494 00

DEPOSITS IN OTHER BANKS.

J. & W. Seligman & Company, New York	\$1,100 65
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STATISTICAL INFORMATION.

Supplementary to Report of Bank of Napa, on the morning of January 1st, 1879.

Total number of depositors	766
Number of depositors receiving interest	463
Amount due depositors bearing interest	\$212,181 46
Amount due depositors not bearing interest	\$61,199 41
Largest amount due any one depositor	\$10,000 00
Decrease during the last six months in deposits	\$48,522 94
Amount of interest to depositors for last six months	\$14,577 41
Rate per cent. per annum of such interest	5 1-5 per cent.
Amount of dividends to stockholders for last six months	\$15,000 00
Rate per cent. per annum of same on paid up capital	12 per cent.
Amount added to reserve fund last six months	\$8,667 15
Expenses (including taxes, \$190) for the last six months	\$6,326 98
Amount of net earnings last six months	\$23,667 15
Average rate per month of interest charged on loans	1 per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Jan. 1st, 1879.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	\$339 98

NEVADA BANK OF SAN FRANCISCO—SAN FRANCISCO.

[Incorporated —, 187—.]

LOUIS McLANE, President.

H. W. GLENNY, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$1,000,000 00	\$1,000,000 00
Real estate by foreclosure		834,944 73
Invested in bonds	2,595,080 23	4,211,843 65
Loans on stocks and bonds	7,478,968 75	9,220,502 59
Money on hand	3,817,830 68	3,052,746 98
Deposits in other banks and places	5,915,942 55	1,045,523 37
Office furniture, fixtures, and safes	3,867 00	3,867 00
Other assets not above enumerated	5,631,735 12	2,734,388 51
Total resources	\$26,443,424 33	\$22,103,816 83
<i>Liabilities.</i>		
Capital stock paid in	\$10,000,000 00	\$10,000,000 00
Surplus fund	2,500,000 00	3,500,000 00
Due depositors	11,223,607 79	7,686,209 42
Bills payable—sterling	1,523,703 48	587,308 70
Other liabilities	377,996 54	103,734 23
Profit and loss account	818,116 52	226,564 48
Total liabilities	\$26,443,424 33	\$22,103,816 83

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$10,000,000; amount subscribed is \$10,000,000, divided into 100,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$10,000,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

J. C. Flood	23,500 shares.	Jas. G. Fair	23,750 shares.
John W. Mackay	23,750 shares.	Louis McLane	5,000 shares.
James L. Flood	250 shares.		
Estate of Wm. S. O'Brien	23,750 shares.	Total held by Directors	100,000 shares.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
San Francisco	\$834,944 73	Not stated.
Merced		
Fresno		
Solano		

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
United States bonds	\$4,103,800 00	\$4,211,843 65
Sonoma County bonds	50,000 00	
Premium on above bonds	58,043 65	
Totals	\$4,211,843 65	\$4,211,843 65

NEVADA BANK OF SAN FRANCISCO—*Continued.*

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Miscellaneous stocks (mostly of mining companies) and various other securities, of which no particulars are given.	\$9,220,502 59	Not stated.

DEPOSITS IN OTHER BANKS.

Due from foreign banks and bankers, and from banks in New York, Boston, Chicago, Philadelphia, and New Orleans-----	\$1,045,523 37
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PROPERTY NOT OTHERWISE ENUMERATED.

Bullion and trade dollars-----	\$826,063 12
Bills receivable—sterling-----	1,878,126 04
Sundry accounts-----	30,199 35
Total-----	<u>\$2,734,388 51</u>

PACIFIC BANK—SAN FRANCISCO.

[Incorporated February 4th, 1863.]

PETER H. BURNETT, President.

S. G. MURPHY, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building.....	\$150,000 00	\$150,000 00
Real estate by foreclosure	4,504 50	4,504 50
Loans on real estate	187,448 93	213,463 75
Invested in stocks and bonds.....	105,656 25	121,440 00
Loans on stocks and bonds.....	213,519 68	239,371 07
Loans on other securities.....	15,818 26	215,754 65
Loans on personal security.....	790,832 41	712,289 75
Money on hand.....	472,258 88	506,916 25
Deposits in other banks and places.....	195,084 58	41,395 10
Total resources.....	\$2,135,123 49	\$2,205,135 07
<i>Liabilities.</i>		
Capital stock paid in.....	\$1,000,000 00	\$1,000,000 00
Surplus fund.....	459,908 49	497,204 12
Due depositors.....	654,729 52	676,589 36
Due banks and bankers.....	19,577 98	30,339 09
Dividends unpaid.....	907 50	1,002 50
Total liabilities.....	\$2,135,123 49	\$2,205,135 07

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$1,000,000; amount subscribed is \$1,000,000, divided into 10,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$1,000,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

Peter H. Burnett.....	600 shares.	C. T. Ryland.....	50 shares.
D. J. Burnett.....	65 shares.	R. B. Woodward.....	62 shares.
R. H. McDonald.....	3,845 shares.	A. H. Baily.....	37 shares.
J. M. McDonald.....	1,856 shares.		
W. T. Wallace.....	1,080 shares.	Total held by Directors.....	7,920 shares.
W. Mabury.....	325 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
San Francisco.....	\$4,504 50	\$4,504 50

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
San Francisco.....	\$83,213 75	San José.....	\$10,000 00
Sonoma.....	24,000 00	Humboldt.....	26,000 00
Kern.....	50,000 00		
Los Angeles.....	3,000 00	Total.....	\$213,463 75
Alameda.....	17,250 00		

PACIFIC BANK—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
United States bonds	\$110,000 00	\$116,100 00
South San Francisco Dock stock	5,270 00	5,340 00
Totals	\$115,270 00	\$121,440 00

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Bank stock	\$63,634 42	\$75,000 00
Bank and railroad stock	20,000 00	40,000 00
United States bonds	45,000 00	133,000 00
Land Association stock	33,492 17	50,000 00
Manufacturing companies' stock	37,550 00	45,000 00
Canal companies' stock	15,000 00	15,500 00
Mining companies' stock	13,244 48	15,000 00
Insurance companies' stock	1,000 00	1,500 00
Bank stock, city bonds, mining stocks, etc.	8,450 00	9,000 00
Totals	\$239,371 07	\$384,000 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Grain and merchandise in warehouse	\$206,336 39	Not stated.
Life insurance policies	9,418 26	\$20,000 00
Totals	\$215,754 65	-----

DEPOSITS IN OTHER BANKS.

Due from foreign banks and bankers	\$13,024 19
New York banks	3,738 20
Boston banks	8,114 01
California banks	16,518 70
Total	\$41,395 10

STATISTICAL INFORMATION.

Supplementary to Report of Pacific Bank, on the morning of January 1st, 1879.

Number of depositors receiving interest	None.
Amount due depositors bearing interest	Nothing.
Increase during the last six months in deposits	\$44,220 00
Amount of interest to depositors for last six months	Nothing.
Rate per cent. per annum of such interest	None.
Amount of dividends to stockholders for last six months	\$50,000 00
Rate per cent. per annum of same on paid up capital	10 per cent.
Amount added to reserve fund last six months	-----
Expenses (including taxes, \$—) for the last year	\$46,039 44
Amount of net earnings last year	\$121,703 93
Average rate per month of interest charged on loans	-----
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	-----
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

PETALUMA SAVINGS BANK—PETALUMA.

[Incorporated September 7th, 1870.]

H. T. FAIRBANKS, President.

D. B. FAIRBANKS, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$7,307 00	\$7,307 00
Real estate by foreclosure	5,370 00	-----
Loans on real estate	110,465 00	80,485 00
Invested in bonds	-----	10,000 00
Loans on stocks	6,100 00	5,600 00
Loans on other securities	-----	350 00
Loans on personal security	127,933 53	115,971 17
Money on hand	18,387 36	19,581 89
Deposits in other banks and places	28,910 53	12,816 55
Office furniture, fixtures, and safes	2,804 00	2,804 00
Other assets not above enumerated	1,204 92	-----
Total resources	\$308,482 34	\$254,915 61
<i>Liabilities.</i>		
Capital stock paid in	\$100,000 00	\$100,000 00
Surplus fund	22,956 55	24,469 05
Due depositors	183,492 79	130,398 56
Dividends unpaid	33 00	48 00
Total liabilities	\$308,482 34	\$254,915 61

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$100,000; amount subscribed is \$100,000, divided into 1,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$100,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

H. T. Fairbanks	100 shares.	J. H. Crane	5 shares.
J. M. Bowles	100 shares.	S. D. Towne	5 shares.
F. L. Maynard	30 shares.	B. Haskell	5 shares.
John Moffett	50 shares.		
A. P. Whitney	20 shares.	Total number held by Directors.	335 shares.
B. F. Tuttle	20 shares.		

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
Sonoma	\$60,285 00	Alameda	\$2,700 00
Mendocino	2,000 00	Humboldt	2,000 00
San Luis Obispo	8,000 00		
Marin	5,500 00	Total	\$80,485 00

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Colusa County school bonds	\$10,000 00	\$10,000 00

PETALUMA SAVINGS BANK—*Continued.*

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
51 shares of this bank	\$5,100 00	\$6,375 00
10 shares Savings Bank of Santa Rosa	500 00	1,000 00
Totals	\$5,600 00	\$7,375 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Certificate of deposit, this bank	\$50 00	\$70 00
Grain in warehouse	300 00	500 00
Totals	\$350 00	\$570 00

DEPOSITS IN OTHER BANKS.

Anglo-Californian Bank, San Francisco	\$12,816 55
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SACRAMENTO BANK—SACRAMENTO.

[Incorporated January 28th, 1875.]

C. H. SWIFT, President.

ED. R. HAMILTON, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Real estate by foreclosure		\$4,101 50
Loans on real estate	\$1,149,779 58	917,788 04
Loans on stocks	12,000 00	
Loans on other securities	2,921 31	2,034 50
Money on hand	50,837 31	139,756 66
Deposits in other banks and places	429 16	2,149 22
Expense account	5,111 50	7,592 71
Total resources	\$1,221,078 86	\$1,073,422 63
<i>Liabilities.</i>		
Capital stock paid in	\$50,000 00	\$50,000 00
Surplus fund	48,350 49	44,761 26
Due depositors	1,069,811 05	904,507 61
Gross earnings	52,432 57	72,515 91
Other liabilities	484 75	1,337 85
Total liabilities	\$1,221,078 86	\$1,073,422 63

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$500,000; amount subscribed is \$500,000, divided into 5,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$50,000, being \$10 per share.

The names of the Directors and the number of shares held by each are as follows:

C. H. Swift	670 shares.	F. R. Dray	30 shares.
F. Birdsall	670 shares.		
Wm. P. Coleman	670 shares.	Total held by Directors	2,320 shares.
P. Scheld	280 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Sacramento	\$3,001 50	\$5,000 00
Alameda	1,100 00	1,100 00
Totals	\$4,101 50	\$6,100 00

SACRAMENTO BANK—Continued.

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
Sacramento	\$240,608 49	Monterey	\$80,000 00
Yolo	136,795 35	Santa Cruz	4,500 00
Solano	61,273 50	Contra Costa	15,043 35
Lake	4,000 00	Alameda	3,000 00
Napa	30,774 05	Tulare	5,000 00
Sonoma	6,000 00	Stanislaus	33,650 00
Tehama	64,000 00	San Joaquin	17,500 00
Placer	9,900 00	Merced	10,000 00
Yuba	6,500 00	Butte	92,263 30
Sutter	10,700 00		
Colusa	86,280 00	Total	\$917,788 04

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Life insurance policies	\$800 00	\$1,200 00
Chattel mortgage on machinery of planing mill	1,000 00	2,000 00
Warehouse receipt	234 50	In litigation.
Totals	\$2,034 50	\$3,200 00

DEPOSITS IN OTHER BANKS.

Due from Merchants' Exchange National Bank, New York	\$2,149 22
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STATISTICAL INFORMATION.

Supplementary to Report of Sacramento Bank, on the morning of January 1st, 1879.

Amount due depositors bearing interest	\$897,147 19
Total number of depositors, all receiving interest	1,425
Number of accounts opened last six months	229
Number of accounts closed last six months	227
Largest amount due any one depositor	\$36,787 02
Number of accounts exceeding \$5,000	28
Aggregate amount of accounts exceeding \$5,000	\$318,440 08
Average amount of each account open	\$630 90
Amount deposited during the last six months	\$326,140 03
Amount withdrawn during the last six months	\$456,467 96
Amount of dividends to depositors for last six months	\$38,730 17
Rate per cent. per annum of such dividends	8.4 per cent.
Amount of dividends to stockholders for last six months	\$2,100 00
Rate per cent. per annum of same on paid up capital	8.4 per cent.
Amount added to reserve fund last six months	
Expenses (including taxes, \$—) for the last six months	\$10,175 04
Amount of net earnings last six months	\$55,358 15
Total amount of dividends to depositors since organization	\$158,503 37
Average rate per annum of dividends to depositors since organization	9 per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	January 1st, 1879.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	\$20 24
What amount of real estate does the institution still hold which it has owned over five years?	None.
Average rate per annum of interest charged on loans	10½ per cent.
Decrease during last six months in deposits	\$130,327 93

SALINAS CITY BANK—SALINAS CITY.

[Incorporated May 10th, 1873.]

A. B. JACKSON, Acting President.

W. S. JOINSON, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$14,836 07	\$14,831 07
Real estate by foreclosure	783 08	4,206 36
Loans on real estate	140,164 29	144,390 53
Invested in county warrants		34,449 44
Loans on county warrants	16,502 99	2,013 50
Loans on other securities		6,951 68
Loans on personal security	137,647 02	94,140 15
Money on hand	14,109 50	28,362 99
Deposits in other banks and places	16,909 47	32,828 26
Office furniture, fixtures, and safes	2,793 94	2,793 94
Other assets not above enumerated	153 40	1,100 00
Total resources	\$343,899 76	\$366,067 92
<i>Liabilities.</i>		
Capital stock paid in	\$200,000 00	\$200,000 00
Due depositors	119,187 27	138,820 84
Due banks and bankers	2,480 02	
Dividends unpaid	6,000 00	
Interest and surplus	16,232 47	27,247 08
Total liabilities	\$343,899 76	\$366,067 92

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$200,000; amount subscribed is \$200,000, divided into 2,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$200,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

J. D. Carr	400 shares.	Jas. H. McDougall	50 shares.
A. B. Jackson	100 shares.	Total number held by Directors_ 800 shares.	
Thomas Rea	200 shares.		
Wm. Vanderhurst	50 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Monterey	\$4,206 36	\$4,000 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Monterey	\$138,390 53
San Benito	6,000 00
Total	\$144,390 53

SALINAS CITY BANK—*Continued.*

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Monterey County warrants	\$32,489 50	Par.
Salinas City warrants.....	1,959 94	Par.
Totals.....	\$34,449 44	\$34,449 44

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Monterey County warrants	\$2,013 50	\$2,250 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned	Value of Securities.
Grain in warehouse	\$6,951 68	\$10,520 00

DEPOSITS IN OTHER BANKS.

Due from San Francisco banks and bankers	\$31,769 37
Due from San José banks and bankers.....	1,058 89
Total	\$32,828 26

PROPERTY NOT OTHERWISE ENUMERATED.

Judgments of foreclosure on real estate	\$1,100 00
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STATISTICAL INFORMATION.

Supplementary to Report of Salinas City Bank, on the morning of January 1st, 1879.

Total number of depositors.....	337
Number of depositors receiving interest	49
Amount due depositors bearing interest.....	\$12,126 20
Amount due depositors not bearing interest	\$126,696 24
Largest amount due any one depositor.....	\$44,816 21
Increase during the last six months in deposits	\$19,633 57
Amount of interest to depositors for last six months.....	\$443 02
Rate per cent. per annum of such interest	6 and 8 per cent.
Amount of dividends to stockholders for last six months.....	\$12,000 00
Rate per cent. per annum of same on paid up capital.....	12 per cent.
Amount added to reserve fund last six months	No reserve fund.
Expenses (including taxes, \$—) for the last six months	\$3,345 24
Amount of net earnings last six months.....	\$11,392 39
Average rate per month of interest charged on loans	14 per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?.....	Nov. 10th, 1878.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?.....	\$369 04

SANTA BARBARA COUNTY BANK—SANTA BARBARA.

[Incorporated July 26th, 1875.]

W. M. EDDY, President.

E. S. SHEFFIELD, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Loans on real estate	\$13,134 00	\$7,945 48
Loans on bonds	100 00	
Loans on personal security	120,004 85	119,769 36
Money on hand	30,761 70	32,649 12
Deposits in other banks and places	28,483 27	21,828 44
Office furniture, fixtures, and safes	2,197 66	2,298 56
Other assets not above enumerated	2,232 48	1,003 54
Total resources	\$196,913 96	\$185,494 50
<i>Liabilities.</i>		
Capital stock paid in	\$70,000 00	\$70,000 00
Surplus fund	4,976 50	5,619 93
Due depositors	121,937 46	107,143 17
Due banks and bankers		
Other liabilities		2,731 40
Total liabilities	\$196,913 96	\$185,494 50

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$100,000; amount subscribed is \$100,000, divided into 1,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$70,000, being \$70 per share.

The names of the Directors and the number of shares held by each are as follows:

W. M. Eddy	232 shares.	S. R. Weldon	40 shares.
John Edwards	50 shares.	Thos. W. Moore	50 shares.
Jos. J. Perkins	25 shares.		
A. Garland	100 shares.	Total number held by Directors	547 shares.
J. F. Morris	50 shares.		

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Santa Barbara	\$7,945 48

DEPOSITS IN OTHER BANKS.

Chemical National Bank, New York	\$11,308 79
Anglo-Californian Bank, San Francisco	4,033 88
Pacific Bank, San Francisco	5,757 23
London and San Francisco Bank, San Francisco	728 54
Total	\$21,828 44

SANTA BARBARA COUNTY BANK—*Continued.*

STATISTICAL INFORMATION.

Supplementary to Report of Santa Barbara County Bank, on the morning of January 1st, 1879.

Total number of depositors	355
Number of depositors receiving interest	23
Amount due depositors bearing interest	\$12,790 17
Amount due depositors not bearing interest	\$94,353 00
Largest amount due any one depositor	\$4,578 12
Decrease during the last six months in deposits	\$14,794 29
Amount of interest to depositors for last six months	\$760 20
Rate per cent. per annum of such interest	6 per cent.
Amount of dividends to stockholders for last six months	\$4,200 00
Rate per cent. per annum of same on paid up capital	12 per cent.
Amount added to reserve fund last six months	\$145 73
Expenses (including taxes) for the last six months	\$3,801 45
Amount of net earnings last six months	\$6,669 64
Average rate per month of interest charged on loans	About 1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Every day.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

BANK OF SANTA CLARA COUNTY—SANTA CLARA.

[Incorporated May 31st, 1875.]

JAS. P. PIERCE, President.

J. F. NESMITH, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$10,122 00	\$9,709 15
Real estate by foreclosure		3,419 79
Loans on real estate	75,512 16	93,247 80
Invested in county warrants	2,413 88	10,397 29
Loans on stocks and warrants		10,928 00
Loans on other securities	11,377 77	52,614 23
Loans on personal security	98,338 49	76,957 98
Money on hand	19,450 17	21,553 44
Deposits in other banks and places	12,706 63	
Office furniture, fixtures, and safes	2,371 17	2,310 00
Other assets not above enumerated		
Total resources	\$232,292 27	\$281,137 68
<i>Liabilities.</i>		
Capital stock paid in	\$105,000 00	\$105,000 00
Surplus fund	14,504 14	18,535 22
Due depositors	112,338 29	134,680 13
Due banks and bankers		22,326 11
Other liabilities	449 84	596 22
Total liabilities	\$232,292 27	\$281,137 68

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$300,000; amount subscribed is \$300,000, divided into 3,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$105,000, being \$35 per share.

The names of the Directors and the number of shares held by each are as follows:

E. C. Bradbury	100 shares.	W. B. Kingsbury	40 shares.
J. H. Dibble	138 shares.	H. M. Leonard	360 shares.
Jacob Eberhard	100 shares.	J. P. Pierce	500 shares.
F. C. Franck	350 shares.	W. H. Stephens	50 shares.
R. K. Ham	600 shares.		
W. D. Hudson	50 shares.	Total number held by Directors..	2,313 shares.
S. J. Jamison	25 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Santa Clara	\$3,419 79	\$4,000 00

BANK OF SANTA CLARA COUNTY—*Continued.*

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Santa Clara	\$89,880 80
Santa Cruz	2,340 00
Tulare	1,027 00
Total	\$93,247 80

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Santa Clara County warrants	\$10,397 29	\$10,397 29

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
San Luis Obispo County warrants	\$50 00	\$89 00
Stock of incorporated companies	10,878 00	25,535 00
Totals	\$10,928 00	\$25,624 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Certificates of deposit	\$240 00	\$288 00
Grain in warehouse	52,374 23	70,104 00
Totals	\$52,614 23	\$70,392 00

BANK OF SANTA CRUZ COUNTY—SANTA CRUZ CITY.

[Incorporated August 10th, 1875.]

LUCIEN HEATH, President.

E. J. COX, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Real estate by foreclosure.....	\$7,353 28 ³ / ₄	\$10,933 20
Loans on real estate.....	87,829 71	63,874 59
Invested in county warrants.....		24,409 66
Loans on stocks and warrants.....	6,519 90	5,259 93
Loans on other securities.....		7,709 07
Loans on personal security.....	45,223 18	36,999 45
Money on hand.....	27,499 35	23,985 46
Deposits in other banks and places.....	1,691 96	3,116 16
Office furniture, fixtures, and safes.....	1,900 00	1,900 00
Interest accrued.....	5,531 91	6,075 70
Total resources.....	\$183,549 29	\$184,263 22
<i>Liabilities.</i>		
Capital stock paid in.....	\$79,600 00	\$79,600 00
Surplus fund.....	1,126 76	5,510 17
Due depositors.....	97,762 40	84,236 34
Due banks and bankers.....	2,836 66	14,916 71
Other liabilities.....	2,223 47	
Total liabilities.....	\$183,549 29	\$184,263 22

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$200,000; amount subscribed is \$79,600, divided into 2,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$79,600, being \$39 80 per share.

The names of the Directors and the number of shares held by each are as follows:

Lucien Heath.....	20 shares.	Elbert Austin.....	12 shares.
Josiah S. Green.....	161 2-5 shares.	Bernard Peyton.....	16 shares.
Christian Hoffman.....	83 1-5 shares.		
Wm. Effey.....	16 shares.	Total held by Directors.....	332 3-5 shares.
S. J. Lynch.....	24 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT, OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Sant Cruz.....	\$10,933 20	\$12,391 64

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Santa Cruz.....	\$62,964 09
Monterey.....	910 50
Total.....	\$63,874 59

BANK OF SANTA CRUZ COUNTY—Continued.

INVESTED IN STOCKS AND BONDS.

Class,	Amount Invested.	Market Value.
Santa Cruz County warrants -----	\$24,409 66	\$24,409 66

LOANED ON STOCKS AND BONDS.

Class,	Amount Loaned.	Market Value.
Bank stock -----	\$3,861 22	\$7,360 00
County warrants and bank stock -----	1,398 71	2,235 68
Totals -----	\$5,259 93	\$9,595 68

LOANED ON OTHER SECURITIES.

Class,	Amount Loaned.	Value of Securities.
Grain in warehouse -----	\$7,509 07	\$8,568 39
Certificate of deposit -----	200 00	300 00
Totals -----	\$7,709 07	\$8,868 39

DEPOSITS IN OTHER BANKS.

Farmers' National Gold Bank, San José -----	\$2,839 81
San José Savings Bank, San José -----	276 35
Total -----	\$3,116 16

STATISTICAL INFORMATION.

Supplementary to Report of Bank of Santa Cruz County, on the morning of January 1st, 1879.

Total number of depositors -----	234
Number of depositors receiving interest -----	38
Amount due depositors bearing interest -----	\$26,326 37
Amount due depositors not bearing interest -----	\$59,993 31
Largest amount due any one depositor -----	\$13,000 00
Decrease during the last six months in deposits -----	\$11,345 22
Amount of interest to depositors for last six months -----	\$4,835 09
Rate per cent. per annum of such interest -----	9 per cent.
Amount of dividends to stockholders for last six months -----	\$1,990 00
Rate per cent. per annum of same on paid up capital -----	5½ per cent.
Amount added to reserve fund last six months -----	Nothing.
Expenses (including taxes, \$—) for last six months -----	\$2,789 32
Amount of net earnings last six months -----	\$5,510 17
Average rate per month of interest charged on loans -----	1 3-16 per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger? -----	Dec. 31st, 1878.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date? -----	None.

BANK OF SAN DIEGO—SAN DIEGO.

[Incorporated May 27th, 1870.]

THOS. L. NESMITH, President.

CHAS. HUBBELL, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$15,705 49	\$15,705 49
Real estate by foreclosure	2,612 24	2,617 16
Loans on real estate	32,586 00	33,086 00
Invested in county warrants	10,143 99	8,238 62
Loans on stocks	4,720 21	4,820 21
Loans on other securities		1,450 00
Loans on personal security	27,751 28	32,243 76
Money on hand	21,547 46	24,674 97
Deposits in other banks and places	3,133 37	5,160 13
Office furniture, fixtures, and safes	2,216 20	2,366 20
Other assets not above enumerated	127 09	170 57
Total resources	\$120,543 33	\$130,533 11
<i>Liabilities.</i>		
Capital stock paid in	\$63,000 00	\$63,000 00
Surplus fund	291 80	531 13
Due depositors	57,251 53	67,001 98
Total liabilities	\$120,543 33	\$130,533 11

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$200,000; amount subscribed is \$63,000, divided into 630 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$63,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

Thos. L. Nesmith	50 shares.	A. P. Knowles	20 shares.
E. W. Morse	30 shares.	Robert Rea	10 shares.
Jas. M. Pierce	10 shares.		
E. Cleveland	10 shares.	Total number held by Directors.	170 shares.
A. Hiscock	40 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
San Diego	\$2,617 16	\$2,100 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
San Diego	\$33,086 00

BANK OF SAN DIEGO—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
San Diego County warrants	\$7,202 02	\$8,238 62
San Diego City warrants	1,036 60	
Totals	\$8,238 62	\$8,238 62

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Bank stock	\$4,820 21	\$6,750 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Grain in warehouse	\$1,390 00	\$2,700 00
Certificate of deposit	60 00	125 00
Totals	\$1,450 00	\$2,825 00

DEPOSITS IN OTHER BANKS.

Due from New York banks and bankers	\$2,352 82
Sather & Company, San Francisco	2,469 82
Los Angeles Bank	337 49
Total	\$5,160 13

STATISTICAL INFORMATION.

Supplementary to Report of Bank of San Diego, on the morning of January 1st, 1879.

Total number of depositors	204
Number of depositors receiving interest	65
Amount due depositors bearing interest	\$28,271 81
Amount due depositors not bearing interest	\$38,730 17
Largest amount due any one depositor	\$3,229 93
Increase during the last six months in deposits	\$9,750 35
Amount of interest to depositors for last six months	\$1,228 20
Rate per cent. per annum of such interest	8, 9, and 10 per cent.
Amount of dividends to stockholders for last six months	None.
Rate per cent. per annum of same on paid up capital	0 per cent.
Amount added to reserve fund last six months	Nothing.
Expenses (including taxes, \$1,087 93) for the last six months, \$1,476 07	\$2,564 00
Amount of net earnings last six months	\$1,706 00
Average rate per month of interest charged on loans	1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	January 1st, 1879.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same time?	None.

SAN JOAQUIN VALLEY BANK—STOCKTON.

[Incorporated March 14th, 1868.]

A. STEVINSON, President.

F. J. HUGGINS, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Real estate by foreclosure	\$10,483 97	\$6,970 10
Loans on real estate	31,950 63	38,354 70
Invested in stocks		4,233 96
Loans on stocks and warrants	6,090 36	4,353 00
Loans on other securities		24,815 99
Loans on personal security	129,615 87	96,930 01
Money on hand	30,657 27	49,081 26
Deposits in other banks and places	1,439 07	16,838 76
Office furniture, fixtures, and safes	4,241 78	3,750 00
Other assets not above enumerated	13,809 25	4,085 15
Profit and loss	2,345 00	
Total resources	\$230,633 20	\$249,412 93
<i>Liabilities.</i>		
Capital stock paid in	\$139,650 00	\$139,650 00
Surplus fund		3,759 60
Due depositors	89,790 96	105,928 60
Due banks and bankers	1,057 51	
Other liabilities	134 73	74 73
Total liabilities	\$230,633 20	\$249,412 93

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$300,000; amount subscribed is \$279,300, divided into 2,793 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$139,650, being \$50 per share.

The names of the Directors and the number of shares held by each are as follows:

James A. Crow	100 shares.	W. B. Johnson	50 shares.
John C. White	109 shares.	J. J. Stevinson	25 shares.
G. B. Claiborne	10 shares.	C. I. Leach	51 shares.
A. Stevinson	25 shares.		
R. C. Sargent	50 shares.	Total number held by Directors	490 shares.
Cornelius Swain	70 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Fresno	\$1,509 49	\$1,509 49
San Joaquin	5,460 61	6,300 90
Totals	\$6,970 10	\$7,809 49

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
San Joaquin	\$38,354 70

SAN JOAQUIN VALLEY BANK—*Continued.*

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Bank stock -----	\$4,233 96	\$4,500 00

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Bank stock -----	\$4,200 00	\$4,500 00
San Joaquin County warrants -----	153 00	153 00
Totals -----	\$4,353 00	\$4,653 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Grain in warehouse -----	\$24,815 99	\$51,094 86

DEPOSITS IN OTHER BANKS.

Due from Drexel, Morgan & Co., New York -----	\$1,833 26
Due from Tallant & Co., San Francisco -----	15,005 50
Total -----	\$16,838 76

PROPERTY NOT OTHERWISE ENUMERATED.

"Other assets," not specified -----	\$4,085 15
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BANK OF SAN JOSÉ—SAN JOSÉ.

[Incorporated January 31st, 1868.]

T. ELLARD BEANS, President.

C. T. PARK, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$120,000 00	\$120,000 00
Real estate by foreclosure	2,935 17	8,935 17
Loans on real estate	353,958 95	375,091 58
Invested in stocks, bonds, and warrants	39,590 96	44,504 25
Loans on stocks	84,925 00	67,962 55
Loans on other securities	17,821 90	30,302 00
Loans on personal security	196,454 47	270,078 19
Money on hand	53,739 99	57,770 11
Deposits in other banks and places	21,926 97	11,149 47
Office furniture, fixtures, and safes	4,704 70	4,717 70
Total resources	\$896,058 11	\$990,511 02
<i>Liabilities.</i>		
Capital stock paid in	\$250,000 00	\$250,000 00
Surplus fund	105,176 54	100,000 00
Due depositors	539,950 32	617,767 94
Due banks and bankers		6,870 94
Other liabilities	931 25	15,872 14
Total liabilities	\$896,058 11	\$990,511 02

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$250,000; amount subscribed is \$250,000, divided into 500 shares of \$500 each. The total amount actually paid in by stockholders, for capital stock, is \$250,000, being \$500 per share.

The names of the Directors and the number of shares held by each are as follows:

T. Ellard Beans	140 shares.
Adolph Pfister	25 shares.
C. W. Pomeroy	7½ shares.

Total number held by Directors 172½ shares.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Santa Clara	\$8,935 17	\$8,000 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Santa Clara	\$360,391 58
Alameda	14,700 00
Total	\$375,091 58

BANK OF SAN JOSÉ—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
San Luis Obispo County bonds -----	\$10,000 00	\$10,500 00
Sonoma County bonds -----	5,000 00	5,250 00
10 shares Bank of San José stock -----	6,375 00	7,000 00
25 shares Commercial and Savings Bank stock -----	833 33	1,000 00
Santa Clara County warrants -----	22,295 92	22,295 92
Totals -----	\$44,504 25	\$46,045 92

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Bank of San José stock -----	\$44,662 55	\$80,000 00
San José Woolen Manufacturing Company's stock -----	5,000 00	11,100 00
San José Fruit Packing Company's stock -----	3,300 00	5,600 00
Santa Cruz and Felton Railroad Company's stock -----	15,000 00	25,000 00
San Lorenzo Flume and Transportation Company's stock -----		
Totals -----	\$67,962 55	\$121,700 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Grain in warehouse -----	\$23,600 00	\$30,000 00
Merchandise in warehouse -----	6,702 00	6,702 00
Totals -----	\$30,302 00	\$36,702 00

DEPOSITS IN OTHER BANKS.

Bank of British Columbia, San Francisco -----	\$11,149 47
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BANK OF SAN LUIS OBISPO—SAN LUIS OBISPO.

[Incorporated August 26th, 1873.]

J. P. ANDREWS, President.

R. E. JACK, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$21,187 39	\$21,187 39
Real estate by foreclosure	13,703 94	40,879 48
Loans on real estate	156,519 02	145,867 39
Invested in stocks	53,500 00	18,500 00
Loans on stocks	3,532 80	2,948 20
Loans on other securities	2,500 00	-----
Loans on personal security	109,833 58	78,282 12
Money on hand	8,459 84	22,521 36
Deposits in other banks and places	3,343 95	14,516 42
Office furniture, fixtures, and safes	1,850 00	1,850 00
Other assets not above enumerated	118 12	11,542 58
Total resources	\$374,548 64	\$358,094 94
<i>Liabilities.</i>		
Capital stock paid in	\$185,000 00	\$185,000 00
Surplus fund	10,994 73	-----
Due depositors	75,553 91	84,075 68
Due banks and bankers	-----	47,467 47
Bills payable	103,000 00	30,000 00
Other liabilities	-----	11,551 79
Total liabilities	\$374,548 64	\$358,094 94

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$200,000; amount subscribed is \$185,000, divided into 1,850 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$185,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

J. P. Andrews	366 shares.	W. L. Beebe	16 shares.
J. P. Andrews, Trustee	165 shares.	R. E. Jack	13 shares.
D. W. James	125 shares.	-----	
M. Gilbert	75 shares.	Total number held by Directors..	
		760 shares.	

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market. Value.
San Luis Obispo	\$40,879 48	\$40,879 48

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
San Luis Obispo	\$145,867 39

BANK OF SAN LUIS OBISPO—*Continued.*

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested	Market Value.
Stock of this bank	\$16,500 00
San Luis Obispo Water Company's stock	2,000 00
Total	\$18,500 00

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
County warrants	\$2,948 20	\$2,948 20

DEPOSITS IN OTHER BANKS.

London and San Francisco Bank (limited), San Francisco	\$14,516 42
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STATISTICAL INFORMATION.

Supplementary to Report of Bank of San Luis Obispo, on the morning of January 1st, 1879.

Total number of depositors	146
Number of depositors receiving interest	48
Amount due depositors bearing interest	\$22,819 35
Amount due depositors not bearing interest	\$61,256 33
Largest amount due any one depositor	\$13,513 16
Increase during the last six months in deposits	
Decrease during the last six months in deposits	
Amount of interest to depositors for last six months	\$1,834 52
Rate per cent. per annum of such interest	8 to 10 per cent.
Amount of dividends to stockholders for last six months	
Rate per cent. of same on paid up capital	
Amount added to reserve fund last six months	
Expenses (including taxes, \$—) for the last six months	\$3,845 00
Amount of net earnings last six months (interest due and not paid, \$11,551 79) ..	\$3,164 41
Average rate per month of interest charged on loans	1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Dec. 31st, 1878.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

SANTA ROSA BANK—SANTA ROSA.

[Incorporated August 20th, 1870.]

E. T. FARMER, President.

W. B. ATTERBURY, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$7,776 65	\$7,807 33
Real estate by foreclosure	31,790 61	34,526 31
Loans on real estate	221,168 69	202,847 75
Invested in warrants		4,558 09
Loans on personal security	248,722 13	256,321 34
Money on hand	20,646 29	43,079 63
Deposits in other banks and places	4,032 74	2,069 10
Office furniture, fixtures, and safes	4,773 82	1,773 82
Interest accrued		42,488 09
Other assets not above enumerated	2,736 09	3,985 47
Total resources	\$538,637 02	\$599,456 93
<i>Liabilities.</i>		
Capital stock paid in	\$300,000 00	\$300,000 00
Surplus fund	1,042 72	48,442 16
Due depositors	209,328 84	204,571 20
Due banks and bankers	22,794 09	32,492 71
Dividends unpaid	3,096 00	12,000 00
Other liabilities	2,375 37	1,950 86
Total liabilities	\$538,637 02	\$599,456 93

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31st, 1878.

The amount of capital stock is \$300,000; amount subscribed is \$300,000, divided into 3,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$300,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

E. T. Farmer	157 shares.	Jno. A. Paxton	100 shares.
David Burris	350 shares.	J. S. Taylor	100 shares.
E. H. Barnes	50 shares.		
Thomas Hopper	376 shares.	Total number held by Directors 1,223 shares.	
Jas. H. Laughlin	90 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Sonoma	\$33,694 99	\$42,000 00
Mendocino	831 32	1,000 00
Totals	\$34,526 31	\$43,000 00

SANTA ROSA BANK—*Continued.*

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Sonoma	\$174,874 92
Mendocino.....	27,972 83
Total.....	\$202,847 75

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Santa Rosa City warrants	\$4,558 09	\$4,558 09

DEPOSITS IN OTHER BANKS.

Sonoma County Bank, Petaluma	\$1,329 72
First National Gold Bank, Petaluma.....	713 45
Ukiah Agency.....	25 93
Total.....	\$2,069 10

PROPERTY NOT OTHERWISE ENUMERATED.

Bills purchased.....	\$3,985 47
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STATISTICAL INFORMATION.

Supplementary to Report of Santa Rosa Bank, on the morning of January 1st, 1879.

Total number of depositors	317
Number of depositors receiving interest.....	110
Amount due depositors bearing interest.....	\$83,000 00
Amount due depositors not bearing interest.....	\$121,571 20
Largest amount due any one depositor.....	\$10,000 00
Increase during the last six months in deposits.....	\$3,001 94
Amount of interest to depositors for last six months	\$2,915 69
Rate per cent. per annum of such interest.....	7 per cent.
Amount of dividends to stockholders for last six months	\$18,000 00
Rate per cent. per annum of same on paid up capital	12 per cent.
Amount added to reserve fund last six months.....	
Expenses (including taxes, \$——) for the last six months.....	\$6,135 09
Amount of net earnings last six months	
Average rate per month of interest charged on loans.....	1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?.....	Dec. 31st, 1878.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?.....	None.

SAVINGS BANK OF SANTA ROSA—SANTA ROSA.

[Incorporated March 10th, 1873.]

A. P. OVERTON, President.

GEORGE P. NOONAN, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$10,618 15	\$12,429 25
Real estate by foreclosure	8,625 69	7,985 64
Loans on real estate	85,099 00	100,869 09
Invested in warrants	1,645 37	1,939 33
Loans on stocks		20,358 57
Loans on other securities		17,451 76
Loans on personal security	81,699 13	61,425 52
Money on hand	16,912 11	5,997 74
Deposits in other banks and places	12,207 30	7,192 49
Office furniture, fixtures, and safes	3,124 93	3,124 93
Total resources	\$219,931 68	\$238,774 32
<i>Liabilities.</i>		
Capital stock paid in	\$100,000 00	\$131,110 00
Surplus fund	9,966 78	4,037 30
Due depositors	109,179 07	103,406 02
Due banks and bankers	374 83	
Other liabilities	411 00	221 00
Total liabilities	\$219,931 68	\$238,774 32

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$300,000; amount subscribed is \$131,110, divided into 1,311 1-10 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$131,110, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

A. P. Overton	110 shares.	E. Latapie	37 shares.
W. S. M. Wright	88 shares.	John Walker	10 shares.
M. Doyle	110 shares.		
D. Brown	55 shares.	Total number held by Directors	440 shares.
Henry Wise	30 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Sonoma	\$7,985 64	\$11,500 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Sonoma	\$100,869 09

SAVINGS BANK OF SANTA ROSA—*Continued.*

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
City of Santa Rosa and Sonoma County warrants -----	\$1,939 33	\$1,939 33

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Bank stock -----	\$20,358 57	\$25,000 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned	Value of Securities.
Grain in warehouse -----	\$17,451 76	\$24,000 00

DEPOSITS IN OTHER BANKS.

Anglo-Californian Bank (limited), San Francisco -----	\$7,192 49
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STATISTICAL INFORMATION.

Supplementary to Report of Savings Bank of Santa Rosa, on the morning of January 1st, 1879.

Total number of depositors -----	375
Number of depositors receiving interest -----	199
Amount due depositors bearing interest -----	\$44,360 05
Amount due depositors not bearing interest -----	\$59,046 27
Largest amount due any one depositor -----	\$7,248 07
Decrease during the last six months in deposits -----	\$5,773 05
Amount of interest to depositors for last six months -----	\$1,857 71
Rate per cent. per annum of such interest -----	7 per cent.
Amount of dividends to stockholders for last six months -----	\$6,981 90
Rate per cent. per annum of same on paid up capital -----	12 per cent.
Amount added to reserve fund last six months -----	
Expenses (including taxes, \$910 14) for the last six months -----	\$2,473 95
Amount of net earnings last six months -----	\$7,538 12
Average rate per month of interest charged on loans -----	1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger? -----	
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date? -----	

BANK OF SONOMA COUNTY—PETALUMA.

[Incorporated May 10th, 1866: reincorporated January 19th, 1877.]

WM. HILL, President.

J. S. VAN DOREN, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$19,000 00	\$19,000 00
Real estate by foreclosure	1,692 70	7,367 70
Loans on real estate	212,686 60	194,690 00
Invested in stocks and warrants	1,000 00	51,500 00
Loans on personal security	271,468 23	277,080 09
Money on hand	30,684 23	27,309 38
Deposits in other banks and places	6,071 28	-----
Office furniture, fixtures, and safes	3,940 00	3,940 00
Total resources	\$546,543 04	\$580,887 17
<i>Liabilities.</i>		
Capital stock paid in	\$300,000 00	\$300,000 00
Surplus fund	11,994 61	13,843 67
Due depositors	232,568 43	231,219 31
Due banks and bankers	-----	33,884 19
Dividends unpaid	1,980 00	1,940 00
Total liabilities	\$546,543 04	\$580,887 17

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$300,000; amount subscribed is \$300,000, divided into 3,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$300,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

Wm. Hill	330 shares.	J. E. Fowler	84 shares.
E. Denman	300 shares.		
W. Dutton	5 shares.	Total number held by Directors.	819 shares.
E. Newburgh	100 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Sonoma	\$7,367 70	\$10,200 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Sonoma	\$168,290 00
Marin	6,500 00
Mendocino	4,400 00
Humboldt	15,500 00
Total	\$194,690 00

BANK OF SONOMA COUNTY—*Continued.*

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
512 shares Bank of Sonoma County stock -----	\$51,200 00	\$58,880 00
Sonoma County road warrant -----	300 00	300 00
Totals -----	\$51,500 00	\$59,180 00

SONOMA VALLEY BANK—SONOMA.

[Incorporated June 9th, 1875.]

DAVID BURRIS, President.

JESSE BURRIS, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Real estate by foreclosure		\$9,174 00
Loans on real estate	\$30,357 00	20,750 00
Loans on personal security	38,382 57	44,035 26
Money on hand	4,664 39	10,707 48
Deposits in other banks and places	3,244 66	7,664 14
Office furniture, fixtures, and safes	1,014 00	1,732 10
Other assets not above enumerated	632 62	1,991 57
Total resources	\$78,295 24	\$96,054 55
<i>Liabilities.</i>		
Capital stock paid in	\$53,100 00	\$53,100 00
Surplus fund	5,803 52	11,327 80
Due depositors	19,391 72	29,834 65
Due banks and bankers		1,792 10
Total liabilities	\$78,295 24	\$96,054 55

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$100,000; amount subscribed is \$53,100, divided into 531 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$53,100, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

David Burris	250 shares.	P. Monahan	10 shares.
Leonard Goss	50 shares.		
F. Duhring	50 shares.	Total number held by Directors	370 shares.
A. F. Haraszthy	10 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Sonoma	\$9,174 00	\$10,000 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Sonoma	\$15,250 00
Tulare	5,500 00
Total	\$20,750 00

DEPOSITS IN OTHER BANKS.

Banks not stated	\$7,664 14
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SONOMA VALLEY BANK—*Continued.*

PROPERTY NOT OTHERWISE ENUMERATED.

Currency	\$1,113 17
Expenses and taxes	878 40
Total	\$1,991 57

STATISTICAL INFORMATION.

Supplementary to Report of Sonoma Valley Bank, on the morning of January 1st, 1879.

Total number of depositors	68
Number of depositors receiving interest	
Amount due depositors bearing interest	\$8,818 98
Amount due depositors not bearing interest	\$21,015 67
Largest amount due any one depositor	\$4,595 25
Increase during the last six months in deposits	
Decrease during the last six months in deposits	
Amount of interest to depositors for last six months	
Rate per cent. per annum of such interest	7 per cent.
Amount of dividends to stockholders for last six months	\$3,186 00
Rate per cent. per annum of same on paid up capital	12 per cent.
Amount added to reserve fund last six months	\$611 66
Expenses (including taxes, \$163 75) for the last six months	\$878 40
Amount of net earnings last six months	\$3,797 66
Average rate per month of interest charged on loans	1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Daily.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None

BANK OF STOCKTON—STOCKTON.

[Incorporated February 3d, 1868.]

GEO. W. KIDD, President.

R. W. TULLY, Cashier.

	Statement June 30, 1878	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Real estate by foreclosure.....	\$61,745 21	\$62,191 41
Loans on real estate.....	12,129 83	18,011 12
Loans on stocks.....	100,472 22	89,659 70
Loans on personal security.....	185,283 39	159,143 83
Money on hand.....	21,639 49	24,559 33
Office furniture, fixtures, and safes.....	2,000 00	2,000 00
Other assets not above enumerated.....	2,337 17	
Total resources.....	\$385,607 31	\$355,565 39
<i>Liabilities.</i>		
Capital stock paid in.....	\$250,000 00	\$305,893 14
Surplus fund.....	48,428 77	27,438 66
Due depositors.....	72,607 83	19,961 34
Due banks and bankers.....	14,570 71	2,272 25
Total liabilities.....	\$385,607 31	\$355,565 39

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$500,000. The total amount actually paid in by stockholders, for capital stock, is \$305,893 14.

The names of the Directors and the number of shares held by each are as follows:

Geo. W. Kidd.....	2,121 shares.	R. W. Tully.....	60 shares.
F. Stewart.....	110 shares.	Chas. Grupe.....	55 shares.
G. W. Trahern.....	68½ shares.		
C. M. Creaner.....	55 shares.	Total number held by Directors.....	2,469½ shares.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
San Joaquin.....	\$37,318 20	\$23,500 00
Stanislaus.....	20,106 50	18,500 00
Mereed.....	1,922 53	1,922 53
Fresno.....	2,844 18	2,490 19
Totals.....	\$62,191 41	\$46,412 72

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
San Joaquin.....	\$1,500 00	Stanislaus.....	\$3,417 17
Fresno.....	7,825 02		
Mereed.....	5,268 93	Total.....	\$18,011 12

BANK OF STOCKTON—*Continued.*

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Stock of this bank	\$88,590 75	\$160,000 00
Stock of Stockton Building and Loan Association	1,068 95	1,500 00
Totals	\$89,659 70	\$161,500 00

BANK OF SUISUN—SUISUN CITY.

[Incorporated February 7th, 1876.]

R. D. ROBBINS, President.

WILLIAM WOLF, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Real estate by foreclosure	\$417 68	\$417 68
Loans on real estate	162,583 59	214,572 44
Invested in county warrants	3,347 91	3,421 66
Loans on county warrants		1,821 92
Loans on other securities		5,284 55
Loans on personal security	98,928 81	38,637 16
Money on hand	10,702 70	23,905 22
Deposits in other banks and places	1,854 04	13,066 63
Office furniture, fixtures, and safes	1,807 05	3,007 05
Total resources	\$282,641 78	\$304,134 31
<i>Liabilities.</i>		
Capital stock paid in	\$100,000 00	\$100,000 00
Surplus fund	12,977 69	17,314 61
Due depositors	163,646 09	180,789 70
Dividends unpaid	6,018 00	6,030 00
Total liabilities	\$282,641 78	\$304,134 31

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31st, 1878.

The amount of capital stock is \$100,000; amount subscribed is \$100,000, divided into 1,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$100,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

R. D. Robbins	465 shares.	J. B. Hoyt	5 shares.
C. F. D. Hastings	180 shares.	Total number held by Directors. 690 shares.	
E. P. Hilborn	20 shares.		
Wm. H. Turner	20 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Solano	\$417 68	\$550 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Solano	\$203,054 67
Contra Costa	11,517 77
Total	\$214,572 44

BANK OF SUISUN—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Solano County warrants -----	\$3,421 66	\$3,421 66

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Solano County warrants -----	\$1,821 92	\$2,200 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Certificates of deposit -----	\$133 05	\$205 00
Grain in warehouse -----	5,151 50	8,000 00
Totals -----	\$5,284 55	\$8,205 00

DEPOSITS IN OTHER BANKS.

Anglo-Californian Bank, San Francisco -----	\$12,450 44
Odd Fellows' Savings and Commercial Bank, Sacramento -----	616 19
Total -----	\$13,066 63

STATISTICAL INFORMATION.

Supplementary to Report of Bank of Suisun, on the morning of January 1st, 1879.

Total number of depositors -----	186
Number of depositors receiving interest -----	94
Amount due depositors bearing interest -----	\$112,742 50
Amount due depositors not bearing interest -----	\$68,047 21
Largest amount due any one depositor -----	\$12,660 11
Increase during the last six months in deposits -----	\$17,143 63
Amount of interest to depositors for last six months -----	\$3,936 12
Rate per cent. per annum of such interest -----	8 per cent.
Amount of dividends to stockholders for last six months -----	\$6,000 00
Rate per cent. per annum of same on paid up capital -----	12 per cent.
Amount added to reserve fund last six months -----	\$5,225 42
Expenses (including taxes, \$—) for the last six months -----	\$2,830 09
Amount of net earnings last six months -----	\$11,225 42
Average rate per month of interest charged on loans -----	1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger? -----	Dec. 31st, 1878.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date? -----	None.

BANK OF TEHAMA COUNTY—RED BLUFF.

[Incorporated September 5th, 1874.]

CHAS. CADWALADER, President.

W. B. CAHOON, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Loans on real estate	\$76,442 89	\$62,351 09
Invested in county warrants		14,832 61
Loans on stocks and warrants	37,240 00	20,251 75
Loans on other securities		4,900 00
Loans on personal security	189,383 30	173,420 50
Money on hand	23,757 45	35,794 04
Deposits in other banks and places		10,811 78
Office furniture, fixtures, and safes	4,800 00	4,800 00
Other assets not above enumerated		2,983 54
Total resources	\$331,623 64	\$330,145 31
<i>Liabilities.</i>		
Capital stock paid in	\$152,860 00	\$159,120 00
Surplus fund	22,665 02	20,689 08
Due depositors	130,946 17	132,218 79
Due banks and bankers	22,323 63	
Dividends unpaid	2,828 82	
Other liabilities		18,117 44
Total liabilities	\$331,623 64	\$330,145 31

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$250,000; amount subscribed is \$200,000, divided into 2,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$159,120, being \$79 56 per share.

The names of the Directors and the number of shares held by each are as follows:

J. S. Cone	276 shares.	W. B. Parker	30 shares.
S. S. Montague	100 shares.	Total number held by Directors. 577 shares.	
H. Kraft	70 shares.		
Chas. Cadwalader	101 shares.		

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Tehama	\$62,351 09

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Tehama County warrants	\$14,832 61	\$14,832 61

BANK OF TEHAMA COUNTY—*Continued.*

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Stock of this bank	\$18,851 75	\$20,000 00
Tehama County warrants	1,400 00	1,500 00
Totals	\$20,251 75	\$21,500 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Grain in warehouse	\$4,900 00	\$6,000 00

DEPOSITS IN OTHER BANKS.

Anglo-Californian Bank, San Francisco	\$9,411 99
Capital Savings Bank, Sacramento	1,399 79
Total	\$10,811 78

STATISTICAL INFORMATION.

Supplementary to Report of Bank of Tehama County, on the morning of January 1st, 1879.

Total number of depositors	194
Number of depositors receiving interest	96
Amount due depositors bearing interest	\$66,438 29
Amount due depositors not bearing interest	\$65,780 50
Largest amount due any one depositor	\$13,500 00
Decrease during the last six months in deposits	\$1,272 62
Amount of interest to depositors for last six months	\$2,924 60
Rate per cent. per annum of such interest { Three months	6 per cent.
Rate per cent. per annum of such interest { Six months	7½ per cent.
Rate per cent. per annum of such interest { Twelve months	9 per cent.
Amount of dividends to stockholders for last six months	\$9,444 11
Rate per cent. per annum of same on paid up capital	12 per cent.
Amount added to reserve fund last six months	\$2,714 20
Expenses (including taxes, \$—) for the last six months	\$4,173 94
Amount of net earnings last six months	\$12,158 31
Average rate per month of interest charged on loans	1¼ and 1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	

BANK OF TOMALES—TOMALES.

[Incorporated June 30th, 1875.]

W. DUTTON, President.

THOS. J. ABLES, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$3,500 00	\$3,703 56
Loans on real estate	70,677 50	72,677 50
Invested in county warrants		1,720 71
Loans on stocks		2,672 00
Loans on personal security	52,664 49	55,629 21
Money on hand	6,407 08	6,298 15
Deposits in other banks and places	5,491 37	
Office furniture, fixtures, and safes	1,463 56	1,260 00
Total resources	\$139,904 00	\$143,961 13
<i>Liabilities.</i>		
Capital stock paid in	\$60,000 00	\$60,000 00
Surplus fund	16,499 92	17,735 01
Due depositors	62,270 47	55,781 19
Due banks and bankers		10,444 93
Other liabilities	1,133 61	
Total liabilities	\$139,904 00	\$143,961 13

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$100,000; amount subscribed is \$100,000, divided into 1,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$60,000, being \$60 per share.

The names of the Directors and the number of shares held by each are as follows:

W. Dutton	4 shares.	Henry E. Lawrence	60 shares.
Hollis Hitchcock	75 shares.		
John Griffin	50 shares.	Total number held by Directors.	259 shares.
George Bunn	70 shares.		

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Marin	\$57,500 00
Sonoma	8,877 50
Mendocino	5,700 00
Los Angeles	600 00
Total	\$72,677 50

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Marin County warrants	\$1,720 71	\$1,720 71

BANK OF TOMALES—*Continued.*

LOANS ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Bank stock -----	\$2,672 00	\$3,720 00

STATISTICAL INFORMATION.

Supplementary to Report of Bank of Tomales, on the morning of January 1st, 1879.

Total number of depositors -----	143
Number of depositors receiving interest -----	95
Amount due depositors bearing interest -----	\$47,169 97
Amount due depositors not bearing interest -----	\$10,301 14
Largest amount due any one depositor -----	\$5,400 00
Decrease during the last six months in deposits -----	\$613 87
Amount of interest to depositors for last six months -----	\$1,896 31
Rate per cent. per annum of such interest -----	6 and 7 per cent.
Amount of dividends to stockholders for last six months -----	0
Rate per cent. of same on paid up capital -----	0
Amount added to reserve fund last six months -----	\$4,405 64
Expenses (including taxes, \$422 27) for the last six months -----	\$993 31
Amount of net earnings last six months -----	\$4,405 64
Average rate per month of interest charged on loans -----	About 1 per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger? -----	January 1st, 1879.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date? -----	None.

BANK OF UKIAH—UKIAH CITY.

[Incorporated January 10th, 1874.]

JOHN S. REED, President.

SAM. WHEELER, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building-----	\$15,588 10	\$15,572 82
Loans on real estate-----	123,153 00	135,012 00
Invested in county warrants-----		13,222 68
Loans on personal security-----	190,493 02	142,968 01
Money on hand-----	3,816 11	28,015 23
Deposits in other banks and places-----		981 33
Total resources-----	\$333,050 23	\$335,772 07
<i>Liabilities.</i>		
Capital stock paid in-----	\$206,000 00	\$206,000 00
Surplus fund-----	3,598 42	4,216 42
Due depositors-----	99,568 78	96,095 25
Undivided profits-----	23,883 03	29,460 40
Total liabilities-----	\$333,050 23	\$335,772 07

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$250,000; amount subscribed is \$206,000, divided into 2,060 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$206,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

R. McGarvey-----	100 shares.	Samuel Orr-----	10 shares.
Jno. S. Reed-----	150 shares.	Total number held by Directors_ 350 shares.	
S. W. McMullen-----	60 shares.		
F. E. Warren-----	30 shares.		

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Mendocino-----	\$129,626 00
Humboldt-----	5,000 00
Lake-----	386 00
Total-----	\$135,012 00

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
County warrants-----	\$13,222 68	\$13,222 68

DEPOSITS IN OTHER BANKS.

Anglo-Californian Bank, San Francisco-----	\$981 33
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BANK OF VALLEJO—VALLEJO.

[Incorporated September 25th, 1866; capital stock increased May 27th, 1878.]

WM. C. GREEVES, President.

J. E. ABBOTT, Cashier.

	Statement June 30, 1878	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Loans on real estate	\$49,446 32	\$58,459 02
Invested in county warrants	800 00	850 00
Loans on stocks and warrants		2,200 00
Loans on other securities		2,050 00
Loans on personal security	14,485 80	4,985 88
Money on hand	14,751 73	8,273 58
Deposits in other banks and places	812 18	1,624 93
Office furniture, fixtures, and safes	2,000 00	2,535 00
Other assets not above enumerated	365 00	305 00
Total resources	\$82,661 03	\$81,283 41
<i>Liabilities.</i>		
Capital stock paid in	\$50,000 00	\$59,500 00
Surplus fund	2,683 65	1,308 32
Due depositors	29,977 38	20,475 09
Total liabilities	\$82,661 03	\$81,283 41

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$150,000; amount subscribed is \$59,500, divided into 595 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$59,500, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

S. C. Farnham	200 shares.	G. B. Richart	10 shares.
W. C. Greeves	50 shares.	C. Hallin	10 shares.
Joseph Wilson	50 shares.	O. C. Chamberlain	15 shares.
John Wilson	70 shares.		
J. E. Abbott	60 shares.	Total number held by Directors ..	475 shares.
C. Widenman	10 shares.		

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Solano	\$58,209 02
Napa	250 00
Total	\$58,459 02

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested	Market Value.
Solano County warrants	\$850 00	\$850 00

BANK OF VALLEJO—Continued.

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Stock of this bank	\$1,200 00	\$2,000 00
Vallejo City warrants	1,000 00	1,100 00
Totals	\$2,200 00	\$3,100 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Grain in warehouse	\$2,000 00	\$2,500 00

DEPOSITS IN OTHER BANKS.

National Gold Bank and Trust Company, San Francisco	\$1,595 63
Bank of Suisun	29 30
Total	\$1,624 93

PROPERTY NOT OTHERWISE ENUMERATED.

Currency	\$305 00
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STATISTICAL INFORMATION.

Supplementary to Report of Bank of Vallejo, on the morning of January 1st, 1879.

Total number of depositors	78
Number of depositors receiving interest	None.
Amount due depositors bearing interest	Nothing.
Amount due depositors not bearing interest	\$18,699 07
Largest amount due any one depositor	\$2,747 90
Decrease during the last six months in deposits	\$9,559 66
Amount of interest to depositors for last six months	Nothing.
Rate per cent. per annum of such interest	Nothing.
Amount of dividends to stockholders for last year	\$5,000 00
Rate per cent. per annum of same on paid up capital	10 per cent.
Amount added to reserve fund last six months	Nothing.
Expenses (including taxes, \$243 05) for the last six months	\$1,589 33
Amount of net earnings last six months	\$2,678 67
Average rate per month of interest charged on loans	1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Every month.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

BANK OF VENTURA—SAN BUENAVENTURA.

[Incorporated September 19th, 1874.]

D. S. BLACKBURN, Vice-President.

HENRY CLAY, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$4,177 65	\$4,177 65
Real estate by foreclosure	392 70	17,365 65
Loans on real estate	54,871 77	22,903 82
Invested in county warrants	723 69	4,439 65
Loans on personal security	83,887 25	72,629 24
Money on hand	11,878 04	27,397 61
Deposits in other banks and places	2,956 47	12,694 81
Office furniture, fixtures, and safes	2,670 60	2,674 10
Interest accrued	16,480 92	-----
Other assets not above enumerated	616 74	7,725 03
Total resources	\$178,655 83	\$172,007 56
<i>Liabilities.</i>		
Capital stock paid in	\$90,000 00	\$90,000 00
Surplus fund	16,894 99	19,806 26
Due depositors	59,388 04	61,538 24
Due banks and bankers	11,851 96	18 48
Other liabilities	520 84	644 58
Total liabilities	\$178,655 83	\$172,007 56

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$250,000; amount subscribed is \$250,000, divided into 2,500 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$90,000, being \$36 per share.

The names of the Directors and the number of shares held by each are as follows:

Thos. R. Bard	315 shares.	Henry Clay	130 shares.
C. D. Bonnestell	30 shares.	Chas. Brooks	35 shares.
D. S. Blackburn	200 shares.	Total number held by Directors, 1,110 shares.	
W. S. Chaffee	100 shares.		
G. W. Chrisman	300 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Ventura	\$17,365 65	\$15,300 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Ventura	\$22,903 82

BANK OF VENTURA—*Continued.*

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Ventura County warrants.....	\$1,439 65	\$4,439 65

DEPOSITS IN OTHER BANKS.

First National Gold Bank, San Francisco.....	\$12,694 81
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PROPERTY NOT OTHERWISE ENUMERATED.

" Other assets," not specified.....	\$7,725 03
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STATISTICAL INFORMATION.

Supplementary to Report of Bank of Ventura, on the morning of January 1st, 1879.

Total number of depositors.....	160
Number of depositors receiving interest.....	41
Amount due depositors bearing interest.....	\$10,229 95
Amount due depositors not bearing interest.....	\$56,572 64
Largest amount due any one depositor (Tax Collector).....	\$30,929 00
Increase during the last six months in deposits (July 1st to January 1st).....	\$8,029 00
Amount of interest to depositors for last six months.....	\$644 58
Rate per cent. per annum of such interest—average.....	9 per cent.
Amount of dividends to stockholders for last six months.....	\$6,250 00
Rate per cent. per annum of same on paid up capital.....	7 per cent.
Amount added to reserve fund last six months (July 1st, 1878, to January 1st, 1879).....	\$3,000 66
Expenses (including taxes, \$—) for the last six months (July 1st, 1878, to January 1st, 1879).....	\$3,046 28
Amount of net earnings last six months (July 1st, 1878, to January 1st, 1879).....	\$16,697 97
Average rate per month of interest charged on loans.....	1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?.....	January 1st, 1879.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?.....	None.

BANK OF VISALIA—VISALIA.

[Incorporated August 31st, 1874.]

R. E. HYDE, President.

JNO. J. MACK, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$10,605 53	\$10,647 40
Loans on real estate	88,016 17	101,671 50
Invested in county warrants		8,690 00
Loans on stocks		1,000 00
Loans on personal security	187,565 05	161,874 18
Money on hand	17,949 88	28,100 11
Deposits in other banks and places	8,268 77	1,924 87
Office furniture, fixtures, and safes	4,456 24	4,464 79
Total resources	\$316,861 64	\$318,372 85
<i>Liabilities.</i>		
Capital stock paid in	\$200,000 00	\$200,000 00
Surplus fund	21,169 12	18,717 25
Due depositors	90,535 80	85,953 40
Due banks and bankers	5,156 72	13,702 20
Total liabilities	\$316,861 64	\$318,372 85

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$200,000; amount subscribed is \$200,000, divided into 2,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$200,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

C. Burrel	500 shares.	T. Lindsey	20 shares.
R. E. Hyde	145 shares.	Total number held by Directors_ 815 shares.	
A. H. Broder	100 shares.		
E. Jacob	50 shares.		

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Tulare	\$101,671 50

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Tulare County warrants	\$8,690 00	\$8,690 00

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
43 shares San Joaquin Valley Bank stock	\$1,000 00	\$2,150 00

BANK OF VISALIA—Continued.

STATISTICAL INFORMATION.

Supplementary to Report of Bank of Visalia, on the morning of January 1st, 1879.

Total number of depositors	262
Number of depositors receiving interest	42
Amount due depositors bearing interest	\$8,680 00
Amount due depositors not bearing interest	\$77,273 40
Largest amount due any one depositor	\$7,200 00
Decrease during the last six months in deposits	\$4,582 40
Amount of interest to depositors for last six months	\$347 50
Rate per cent. per annum of such interest	8 per cent.
Amount of dividends to stockholders for last six months	\$12,000 00
Rate per cent. per annum of same on paid up capital	12 per cent.
Amount added to reserve fund last six months	
Expenses (including taxes, \$1,344) for the last six months	\$4,214 00
Amount of net earnings last six months	\$16,835 82
Average rate per month of interest charged on loans	1½ per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	

BANK OF WATSONVILLE—WATSONVILLE.

[Incorporated May 11th, 1874.]

CHAS. FORD, President.

J. N. BESSE, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building	\$12,855 97	\$12,883 97
Real estate by foreclosure		
Loans on real estate	127,804 50	121,820 00
Invested in county warrants	3,178 78	5,724 39
Loans on stocks	2,600 00	2,900 00
Loans on other securities		9,523 39
Loans on personal security	26,402 28	39,459 30
Money on hand	11,485 95	15,034 08
Deposits in other banks and places	8,734 11	50,005 18
Office furniture, fixtures, and sales	2,757 90	2,757 90
Interest accrued	33,563 81	35,993 25
Other assets not above enumerated	1,769 78	1,610 74
Total resources	\$231,153 08	\$297,712 20
<i>Liabilities.</i>		
Capital stock paid in	\$140,000 00	\$140,000 00
Surplus fund	3,330 87	3,003 95
Due depositors	80,155 24	118,220 17
Due banks and bankers		1,538 57
Other liabilities	7,666 97	34,949 51
Total liabilities	\$231,153 08	\$297,712 20

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock is \$200,000; amount subscribed is \$200,000, divided into 400 shares of \$500 each. The total amount actually paid in by stockholders, for capital stock, is \$140,000, being \$350 per share.

The names of the Directors and the number of shares held by each are as follows:

Chas. Ford	30 shares.	J. N. Besse	55 shares.
G. M. Bockius	20 shares.	W. G. Hudson	5 shares.
Jno. T. Porter	20 shares.		
Thos. Walker	31 shares.	Total number held by Directors ..	181 shares.
P. J. Kelly	20 shares.		

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Santa Cruz	\$63,620 00
Monterey	58,200 00
Total	\$121,820 00

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Santa Cruz County warrants	\$5,724 39	\$5,724 39
Monterey County warrants		

BANK OF WATSONVILLE—Continued.

LOANED ON STOCKS AND BONDS.

Class,	Amount Loaned.	Market Value.
Stock of this bank	\$2,050 00	\$4,000 00
Stock of Grangers' Bank of California	100 00	150 00
Stock of Bank of Santa Cruz County	250 00	350 00
Stock of Maxim Gas Company	500 00	Not stated.
Totals	\$2,990 00

LOANED ON OTHER SECURITIES.

Class,	Amount Loaned.	Value of Securities.
Grain in warehouse	\$9,523 39	\$15,000 00

DEPOSITS IN OTHER BANKS.

Donohoe, Kelly & Co., Bankers, San Francisco	\$50,005 18
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PROPERTY NOT OTHERWISE ENUMERATED.

Currency	\$1,120 24
Rents due	240 00
Expenses	250 50
Total	\$1,610 74

STATISTICAL INFORMATION.

Supplementary to Report of Bank of Watsonville, on the morning of January 1st, 1879.

Total number of depositors	240
Number of depositors receiving interest	135
Amount due depositors bearing interest	\$59,050 94
Amount due depositors not bearing interest	\$59,169 23
Largest amount due any one depositor	\$11,609 31
Increase during the last six months in deposits	\$38,065 93
Amount of interest on bills payable last six months	\$1,000 00
Amount of interest to depositors for last six months	\$1,623 37
Rate per cent. per annum of such interest	8 per cent.
Amount of dividends to stockholders for last six months	\$8,000 00
Rate per cent. per annum of same on paid up capital	About 12 per cent.
Amount added to reserve fund last six months	\$536 48
Expenses (including taxes, \$530 09) for the last six months	\$2,517 80
Amount of net earnings last six months	\$10,729 70
Average rate per month of interest charged on loans
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	January 1st, 1879.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

WELLS, FARGO & COMPANY'S BANK—SAN FRANCISCO.

[Incorporated February 5th, 1866.]

LLOYD TEVIS, President.

H. WADSWORTH, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Real estate by foreclosure	\$99,545 41	\$116,020 07
Loans on real estate	20,000 00	36,800 00
Invested in stocks and bonds		55,628 00
Loans on stocks and bonds	483,517 56	741,695 72
Loans on personal security	985,935 02	652,747 69
Money on hand	621,291 79	556,494 53
Deposits in other banks and places		16,645 03
Office furniture, fixtures, and safes	3,479 25	3,479 25
Due from agencies	653,603 46	759,559 11
Total resources	\$2,867,372 49	\$2,939,069 40
<i>Liabilities.</i>		
Capital stock paid in	\$500,000 00	\$500,000 00
Surplus fund	1,324,951 57	1,448,589 24
Due depositors	1,042,420 92	915,480 30
Due banks and bankers		8,961 26
Other liabilities		66,038 60
Total liabilities	\$2,867,372 49	\$2,939,069 40

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock of Wells, Fargo & Company is \$5,000,000; amount subscribed is \$5,000,000, divided into 50,000 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$500,000, being \$10 per share.

The names of the Directors and the number of shares held by each are as follows:

Lloyd Tevis	1,000 shares.	D. O. Mills	508 shares.
J. B. Haggin	17 shares.	Oliver Eldridge	10 shares.
Leland Stanford	2,719½ shares.	C. B. Brigham	145 shares.
Charles Crocker	2,621 shares.		
W. G. Fargo	10 shares.	Total number held by Directors	7,576½ shares.
A. H. Barney	546 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

Where Situated.	Cost on Books.	Estimated Market Value.
San Francisco	\$65,101 60	\$60,000 00
Carson City, Nevada	10,000 00	5,000 00
Salt Lake City, Utah	25,000 00	30,000 00
Denver City, Colorado	8,000 00	8,000 00
Pioche, Nevada	1,918 47	2,000 00
Chicago, Illinois	6,000 00	3,000 00
Totals	\$116,020 07	\$108,000 00

WELLS, FARGO & COMPANY'S BANK—*Continued.*

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
San Francisco	\$32,000 00
Santa Barbara	4,800 00
Total	\$36,800 00

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Southern Pacific Railroad bonds	\$100,000 00	\$160,000 00
Wells, Fargo & Company's stock	80,000 00	95,000 00
Gas Company's stock	25,000 00	29,000 00
California Dry Dock Company's stock	80,000 00	96,000 00
Mining companies' stocks	456,695 72	760,000 00
Totals	\$741,695 72	\$1,140,000 00

DEPOSITS IN OTHER BANKS.

Due from foreign banks and bankers	\$12,756 10
Eastern banks	3,888 93
Total	\$16,645 03

AMOUNTS DUE FROM AGENCIES.

Due from Carson Agency	\$342,228 73
Due from Salt Lake Agency	260,485 36
Due from Pioche Agency	7,114 05
Due from New York Agency	149,730 97
Total	\$759,559 11

STATISTICAL INFORMATION.

Supplementary to Report of Wells, Fargo & Company's Bank, on the morning of January 1st, 1879.

Number of depositors receiving interest	None.
Amount due to depositors bearing interest	Nothing.
Increase during the last six months in deposits	
Decrease during the last six months in deposits	
Amount of interest to depositors for last six months	Nothing.
Rate per cent. per annum of such interest	None.
Amount of dividends to stockholders for last six months	\$200,000 00
Rate per cent. per annum of same on paid up capital	Eight (8) per cent.
Amount added to reserve fund last six months	\$83,637 00
Expenses (including taxes, \$—) for the last six months	\$33,260 59
Amount of net earnings last six months	\$283,637 00
Average rate per month of interest charged on loans	10-12 per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	

BANK OF WOODLAND—WOODLAND.

[Incorporated November 16th, 1868.]

JOHN D. STEPHENS, President.

C. W. BUSH, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building-----	\$14,750 68	\$14,752 18
Real estate by foreclosure-----	9,822 85	9,080 83
Loans on real estate-----	231,021 48	271,323 77
Invested in county warrants-----	2,532 15	1,557 28
Loans on county warrants-----		1,445 90
Loans on personal security-----	246,740 38	295,626 49
Money on hand-----	68,045 23	36,222 40
Deposits in other banks and places-----	53,212 05	7,441 84
Office furniture, fixtures, and safes-----	947 00	948 00
Interest accrued-----	41,399 76	33,886 41
Other assets not above enumerated-----	1,602 90	9,276 67
Total resources-----	\$670,074 48	\$681,861 77
<i>Liabilities.</i>		
Capital stock paid in-----	\$450,000 00	\$450,000 00
Surplus fund-----	31,500 00	13,500 00
Due depositors-----	176,858 73	190,685 03
Due banks and bankers-----	1,175 46	309 79
Gross earnings-----	10,540 29	27,366 95
Total liabilities-----	\$670,074 48	\$681,861 77

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31st, 1878.

The amount of capital stock is \$450,000; amount subscribed is \$450,000, divided into 4,500 shares of \$100 each. The total amount actually paid in by stockholders, for capital stock, is \$450,000, being \$100 per share.

The names of the Directors and the number of shares held by each are as follows:

John D. Stephens-----	1,841 shares.	L. D. Stephens-----	158 shares.
J. Hollingsworth-----	202 shares.	F. S. Freeman-----	10 shares.
Frank Miller-----	175 shares.	C. W. Bonyng-----	93 shares.
C. Nelson-----	121 shares.		
J. Wilcoxson-----	50 shares.	Total held by Directors-----	2,670 shares.
E. R. Lowe-----	20 shares.		

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Yolo-----	\$9,080 83	\$8,650 00

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
Yolo-----	\$269,716 27
Solano-----	1,607 50
Total-----	\$271,323 77

BANK OF WOODLAND—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Yolo County warrants	\$1,857 28	\$1,857 28

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Yolo County warrants	\$1,445 90	\$1,740 00

DEPOSITS IN OTHER BANKS.

National Bank of Commerce, New York	\$3,671 25
Capital Savings Bank, Sacramento	3,770 59
Total	\$7,441 84

PROPERTY NOT OTHERWISE ENUMERATED.

Remittances, checks, etc.	\$4,363 33
Taxes and cost advanced	767 46
Bank tax and license	383 93
Expenses since June 1st, 1878	3,761 95
Total	\$9,276 67

STATISTICAL INFORMATION.

Supplementary to Report of Bank of Woodland, on the morning of January 1st, 1879.

Total number of depositors	223
Number of depositors receiving interest	None.
Amount due depositors bearing interest	
Amount due depositors not bearing interest	\$190,685 03
Largest amount due any one depositor	\$48,963 20
Increase during the last six months in deposits	\$13,826 30
Amount of interest to depositors for last six months	None.
Rate per cent. per annum of such interest	
Amount of dividends to stockholders for last six months	\$27,000 00
Rate per cent. per annum of same on paid up capital	12 per cent.
Amount added to reserve fund last six months	Nothing.
Expenses (including taxes, \$383 93) for the last six months	\$4,300 23
Amount net earnings last six months	\$30,000 00
Average rate per month of interest charged on loans	1 per cent.
As of what date was an abstract made of balances due the depositors, as shown by the depositors' ledger?	Weekly.
What was the amount of discrepancy, if any, between the aggregate of such balances and the amount shown by the general ledger to be due depositors at same date?	None.

SAN FRANCISCO BRANCH OF THE "ANGLO-CALIFORNIAN" BANK (LIMITED).

[Foreign corporation.]

F. F. LOW.
IGNATZ STEINHART, } Managers.

P. M. LILIENTHAL, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Loans on real estate	\$352,000 00	\$388,544 21
Loans on stocks and bonds	141,900 00	354,574 90
Loans on other securities	446,156 43	666,609 92
Loans on personal security	1,513,037 97	1,099,660 82
Money on hand	881,013 14	1,075,673 88
Deposits in other banks and places	290,509 03	337,050 50
Office furniture, fixtures, and safes	1,000 00	1,000 00
Due from California banks and bankers	313,612 35	480,620 65
Bullion on hand and in transit	247,547 00	698,210 12
Other assets not above enumerated	207,821 59	206,916 80
Total resources	\$4,394,597 51	\$5,308,861 80
<i>Liabilities.</i>		
Due head office, London	\$2,588,143 70	\$3,091,710 20
Due depositors	1,616,985 38	1,650,901 37
Due banks and bankers	106,152 54	437,900 18
Undivided profits	78,315 89	81,580 48
Other liabilities	5,000 00	46,769 57
Total liabilities	\$4,394,597 51	\$5,308,861 80

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock of the parent bank is £600,000 sterling; amount subscribed is £600,000 sterling, divided into 29,970 shares of £20 and 600 shares of £1 each. The total amount actually paid in by stockholders, for capital stock, is £300,300 sterling, being £10 sterling per share on 29,970 shares and £1 per share on 600 shares. Reserve fund (London) is £38,000 sterling.

The names of the Directors are as follows: Hugh McCulloch, W. F. Schofield, E. H. Lushington, J. Sebag, I. Seligman, and J. Sington. Number of shares held by the Directors is only known in London.

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
Alameda	\$24,000 00	Trinity	\$14,737 49
Los Angeles	95,000 00	Total	\$388,544 21
Napa	38,000 00		
San Francisco	216,806 72		

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Mining stocks	\$354,574 90	Estimated double.

SAN FRANCISCO BRANCH OF THE "ANGLO-CALIFORNIAN" BANK (LIMITED)—
Continued.

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Warehouse receipts for merchandise, bills of lading, bullion on hand and in transit from the mines-----	\$666,609 92	Not stated.

DEPOSITS IN OTHER BANKS.

Due from American and foreign banks and bankers-----	\$337,050 50
--	--------------

PROPERTY NOT OTHERWISE ENUMERATED.

Due on letters of credit-----	\$116,174 86
Due for remittances in transit-----	32,668 19
Due sundry accounts-----	58,073 75
Total-----	<u>\$206,916 80</u>

SAN FRANCISCO BRANCH OF THE "BANK OF BRITISH COLUMBIA."

[Foreign corporation.]

FREDERICK TOWNSEND -----Manager.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building, fixtures, and furniture -----	\$70,465 86	\$70,465 86
Real estate by foreclosure -----		6,000 00
Loans on real estate -----	15,803 80	10,202 63
Invested in stocks and bonds -----	67,096 52	73,692 42
Loans on stocks and bonds -----	801,424 08	553,024 35
Loans on other securities -----	78,387 67	100,300 05
Loans on personal security -----	429,474 49	318,210 07
Money on hand -----	326,916 25	336,693 03
Deposits in other banks and places -----	39,294 59	44,911 07
Other assets not above enumerated -----		13,597 38
Total resources -----	\$1,828,863 26	\$1,527,096 86
<i>Liabilities.</i>		
Due head office, London -----	\$1,281,317 22	\$1,176,176 29
Due Victoria Branch -----	155,759 07	
Due depositors at San Francisco -----	280,307 87	345,124 58
Due banks and bankers -----	98,925 24	5,795 99
Other liabilities -----	12,553 86	
Total liabilities -----	\$1,828,863 26	\$1,527,096 86

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock of the parent bank is £500,000 sterling, divided into 25,000 shares of £20 sterling each. The total amount actually paid in by stockholders, for capital stock, is £346,000 sterling. The amount of the reserve fund is £38,000 sterling.

The names of the Directors are as follows: Robert Gillespie, Chairman; Eden Colville, James Anderson, H. D. Harrison, Henry Ed. Ransom, Sir John Rose, Baronet. Number of shares held by the Directors is only known in London.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
San Francisco -----	\$6,000 00	Not stated.

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.
San Francisco -----	\$10,202 63

SAN FRANCISCO BRANCH OF THE "BANK OF BRITISH COLUMBIA"—Continued.

INVESTED IN STOCKS AND BONDS.

Class.	Amount Invested.	Market Value.
Montgomery Avenue bonds	\$67,096 52	\$66,300 00
Capital Gas Company (Sacramento) stock	6,595 90	6,000 00
Total	\$73,692 42	\$72,300 00

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Spring Valley Water Company bonds	\$107,025 91	\$300,000 00
Railroad bonds	165,000 00	247,500 00
Water and gas companies' stock	249,750 00	341,875 00
United States bonds	450 00	500 00
San Francisco City bonds	14,000 00	19,000 00
Miscellaneous stocks	16,798 44	50,000 00
Totals	\$553,024 35	\$958,875 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Merchandise and warehouse receipts	\$91,775 70	Not stated.

DEPOSITS IN OTHER BANKS.

Due from banks and bankers	\$100 00
Agents Bank of Montreal, New York	44,811 07
Total	\$44,911 07

PROPERTY NOT OTHERWISE ENUMERATED.

"Other assets," particulars not stated	\$13,597 38
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SAN FRANCISCO AGENCY OF THE "BANK OF BRITISH NORTH AMERICA."

[Foreign incorporation.]

A. McKINLAY ----- Agent.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Loans on stocks and bonds-----	\$566,000 00	\$603,590 07
Loans on other securities-----	106,972 00	278,998 56
Loans on personal security-----	212,286 19	101,500 13
Money on hand-----	446,987 15	285,548 22
Total resources-----	\$1,332,245 34	\$1,269,636 98
<i>Liabilities.</i>		
Due head office, London-----	\$1,035,497 06	\$1,098,909 21
Due depositors at San Francisco-----	296,748 28	170,727 77
Total liabilities-----	\$1,332,245 34	\$1,269,636 98

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock of the parent bank is £1,000,000 sterling, divided into 20,000 shares of £50 sterling each. The total amount actually paid in by stockholders to the parent bank, for capital stock, is £1,000,000 sterling. The total amount of the reserve fund is £231,871 sterling.

The names of the Directors are as follows: Robert A. B. Dobece, Henry R. Farrer, Alexander Gillespie, Richard H. Glyn, Henry J. B. Kendall, J. J. Kingsford, Frederick Lubbock, A. H. Philpotts, J. Murray Robertson. Number of shares held by the Directors is only known at London.

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
United States, State, city and county bonds-----	\$75,100 00	\$88,012 00
Gas and water companies' stock-----	378,490 07	666,551 00
First mortgage bonds of railroads and other private corporations-----	150,000 00	235,000 00
Totals-----	\$603,590 07	\$989,563 00

LOANED ON OTHER SECURITIES.

Class.	Amount Loaned.	Value of Securities.
Merchandise, bills of lading, etc.-----	\$278,998 56	\$3 15,779 93

SAN FRANCISCO BRANCH OF THE LONDON AND SAN FRANCISCO BANK (LIMITED).

[Foreign corporation.]

A. SCRIVENER, Manager.

W. STEEL, Cashier.

	Statement June 30, 1878.	Statement Decem- ber 31, 1878.
<i>Resources.</i>		
Bank lot and building*		
Real estate owned by foreclosure	\$43,969 19	\$46,474 82
Loans on real estate	290,686 27	288,761 27
Loans on stocks	297,850 00	357,050 00
Loans on other securities	333,483 26	372,680 18
Loans on personal security	3,564,362 20	3,011,841 39
Money on hand	1,325,191 49	1,001,214 72
Deposits in other banks and places	20,711 52	423 25
Other assets not above enumerated	481,414 82	616,397 96
Total resources	\$6,357,668 75	\$5,694,843 59
<i>Liabilities.</i>		
Due head office, London	\$4,166,820 98	\$3,917,934 80
Due depositors	2,024,917 43	1,608,868 77
Due banks and bankers	13,473 99	152,050 86
Other liabilities	152,456 35	15,989 16
Total liabilities	\$6,357,668 75	\$5,694,843 59

*Appears in books of the head office, London.

DETAILS FROM LAST SEMI-ANNUAL REPORT, DECEMBER 31ST, 1878.

The amount of capital stock of the bank is £1,000,000 sterling; amount paid in is £600,000 sterling, divided into 60,000 shares of £10 each. The reserve fund held in London is £96,000 sterling.

The names of the Directors and the number of shares held by each are as follows (according to books kept in London):

Frederick Rodewald	1,500 shares.	Junius S. Morgan	1,000 shares.
Edward H. Green	3,480 shares.	Robert Ryrie	450 shares.
I. F. Flemmich	500 shares.	Baron H. de Stern	697 shares.
Henry Goshen	250 shares.	Rudolph Sulzbach	1,000 shares.
Julius May	945 shares.		
John Parrott	10,000 shares.	Total held by Directors	19,822 shares.

REAL ESTATE TAKEN BY FORECLOSURE OR IN SETTLEMENT OF ACCOUNTS.

County Situated In.	Cost on Books.	Estimated Market Value.
Sonoma	\$21,414 36	\$21,414 36
Los Angeles	8,810 46	8,810 46
Santa Barbara	16,250 00	16,250 00
Totals	\$46,474 82	\$46,474 82

SAN FRANCISCO BRANCH OF THE LONDON AND SAN FRANCISCO BANK (LIMITED)—*Continued.*

LOANS ON REAL ESTATE BY COUNTIES.

Name of County.	Amount Loaned.	Name of County.	Amount Loaned.
San Francisco-----	\$26,275 00	Alameda-----	\$21,000 00
Fresno-----	10,000 00	Los Angeles-----	50,000 00
San Diego-----	18,500 00		
Solano-----	150,000 00	Total-----	\$288,761 27
Tulare-----	12,986 27		

LOANED ON STOCKS AND BONDS.

Class.	Amount Loaned.	Market Value.
Shares of incorporated mining companies-----	\$285,050 00	\$877,221 85
Miscellaneous stocks-----	72,000 00	110,372 00
Totals-----	\$357,050 00	\$987,593 85

LOANED ON OTHER SECURITIES.

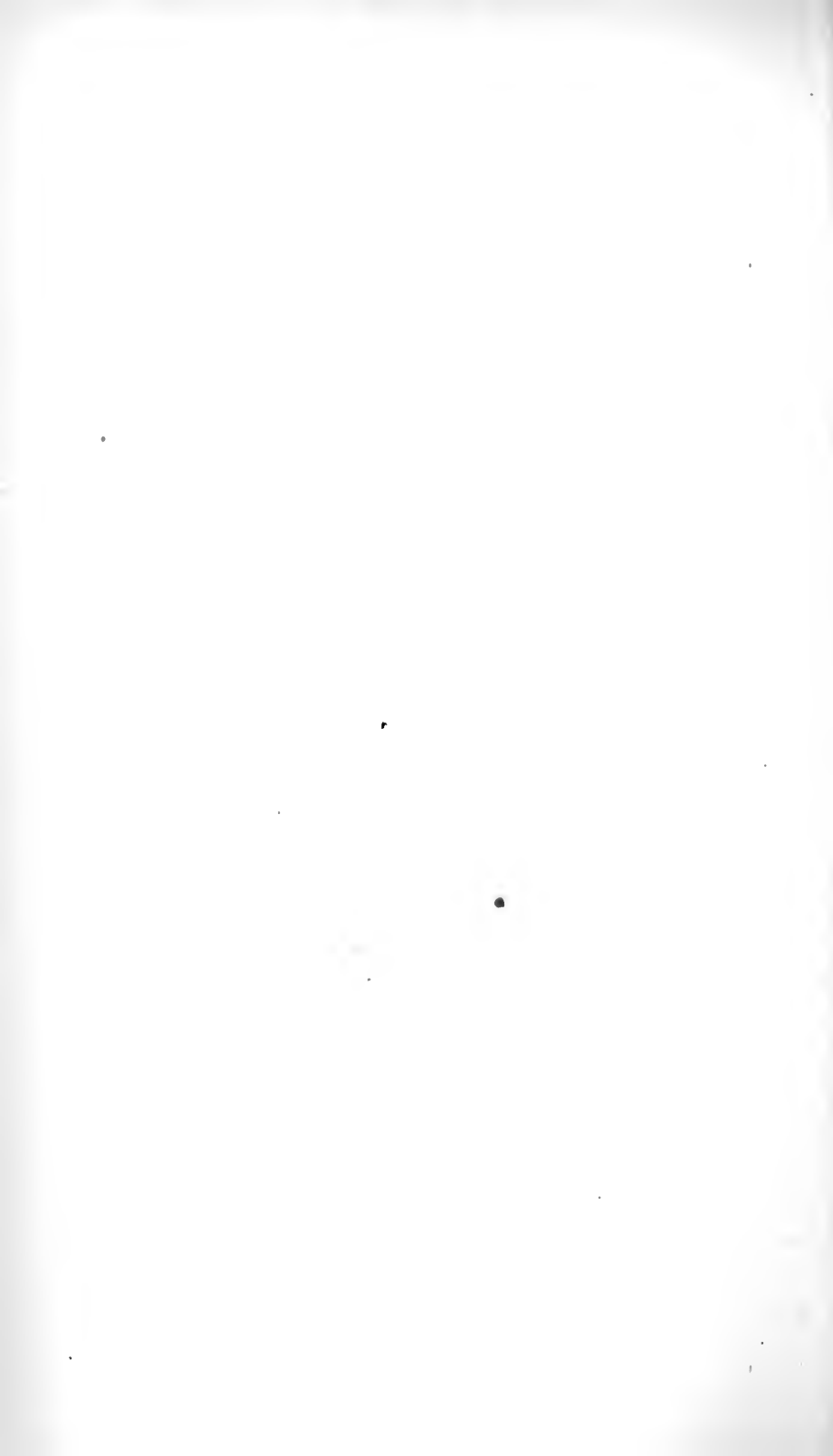
Class.	Amount Loaned.	Value of Securities.
Merchandise in warehouse-----	\$145,156 21	\$152,272 75
Bills of lading-----	227,523 97	229,522 72
Totals-----	\$372,680 18	\$381,795 47

DEPOSITS IN OTHER BANKS.

Due from foreign banks and bankers-----	\$423 25
---	----------

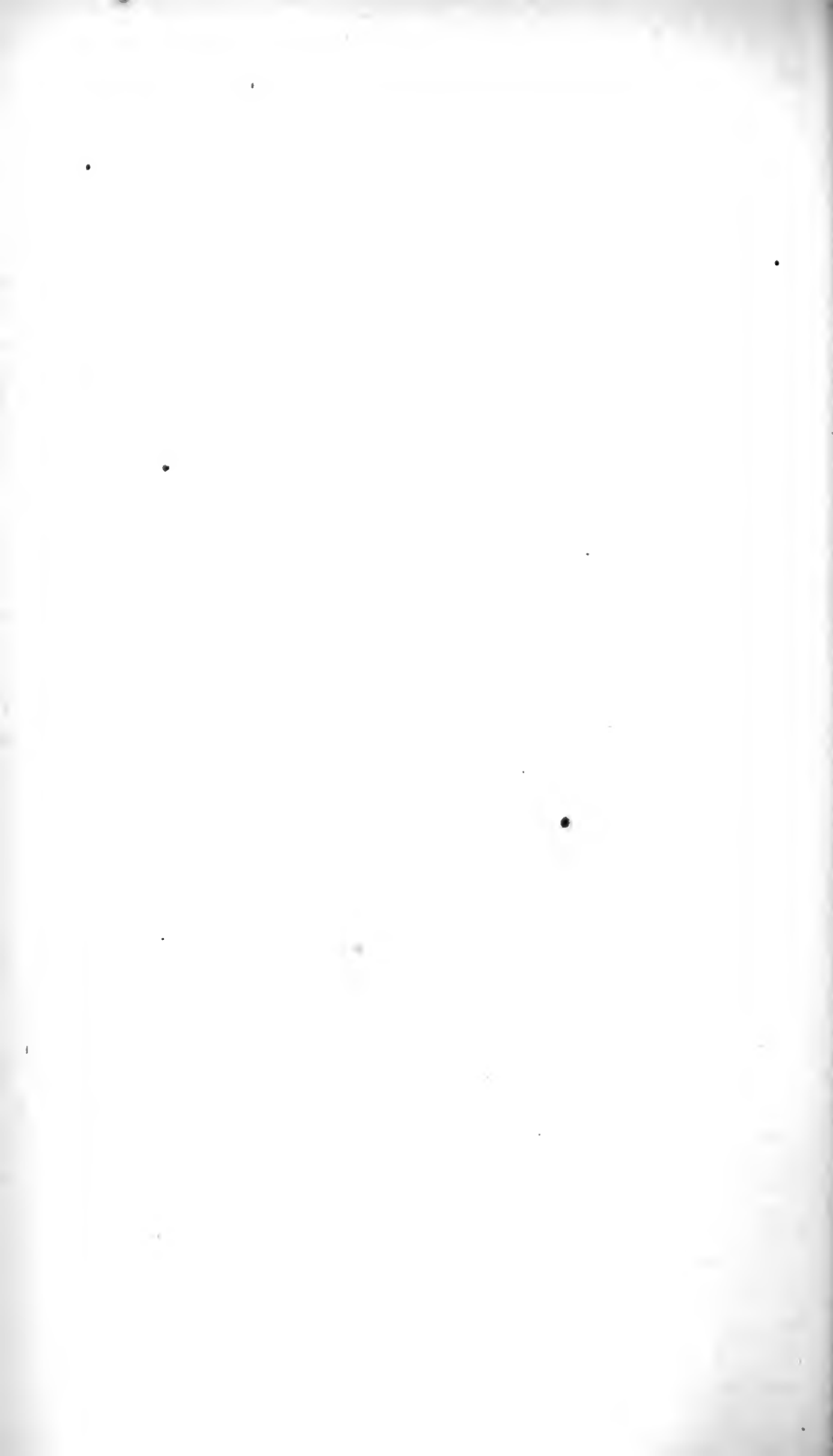
PROPERTY NOT OTHERWISE ENUMERATED.

Sundry parties for drafts accepted by head office, letters of credit, etc.-----	\$616,397 96
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STATEMENTS SHOWING THE CONDITION
OF THE
BANKS AND SAVINGS BANKS
WHEN
EXAMINED BY THE BANK COMMISSIONERS.

[The Banks are arranged alphabetically by counties.]



COMMISSIONERS' EXAMINATIONS.

ALAMEDA COUNTY.

OAKLAND BANK OF SAVINGS—OAKLAND.

[November 5th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot.....	\$79,209 71	Capital paid in coin.....	\$437,000 00
Real estate by foreclosure....	37,123 74	Reserve fund.....	33,240 19
Loans on real estate.....	1,366,422 02	Due depositors.....	1,417,368 08
Invested in United States bonds.....	100,700 00	Interest collected.....	60,046 31
Invested in Oakland City and county bonds.....	54,620 33	Other liabilities.....	3,209 33
Loans on stocks and bonds....	11,232 00		
Loans on personal security....	68,751 77		
Loans on other securities.....	16,149 55		
Money on hand.....	107,962 98		
Deposits in other banks.....	63,278 23		
Furniture, fixtures, and safes..	2,038 75		
Interest accrued.....	33,451 79		
Expenses, taxes, etc.....	9,923 04		
Total assets.....	\$1,950,863 91	Total liabilities.....	\$1,950,863 91

Examined by Commissioners Coleman and Watt.

UNION SAVINGS BANK—OAKLAND.

[November 4th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot.....	\$64,464 41	Capital paid in coin.....	\$450,000 00
Real estate by foreclosure....	828 39	Reserve fund.....	21,529 00
Loans on real estate.....	1,434,117 69	Due depositors.....	1,209,338 56
Invested in stocks and bonds..	95,284 15	Interest account.....	66,269 46
Loans on personal security....	6,685 00	Other liabilities.....	2,353 56
Money on hand.....	33,620 37		
Deposits in other banks.....	61,153 04		
Interest accrued.....	48,095 54		
Expenses, taxes, etc.....	4,684 38		
Other assets.....	557 61		
Total assets.....	\$1,749,490 58	Total liabilities.....	\$1,749,490 58

Examined by Commissioners Coleman and Watt.

BUTTE COUNTY.

BANK OF BUTTE COUNTY—CHICO.

[November 26th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$31,000 00	Capital paid in coin	\$250,000 00
Real estate by foreclosure	20,255 57	Surplus fund	3,826 72
Loans on real estate	49,687 23	Due depositors	163,934 07
Invested in stocks and bonds	660 07	Due banks and bankers	68,361 73
Loans on personal security	257,866 38	Interest account	17,072 35
Loans on other security	77,065 33		
Money on hand	56,240 38		
Deposits in other banks	451 70		
Furniture, fixtures, and safes	3,900 41		
Expenses, taxes, etc.	6,067 80		
Total assets	\$503,194 87	Total liabilities	\$503,194 87

Examined by Commissioners Coleman and Watt.

BANK OF CHICO—CHICO.

[November 25th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$15,599 52	Capital paid in coin	\$356,300 00
Real estate by foreclosure	37,868 23	Due depositors	265,263 50
Loans on real estate	108,814 52	Due banks and bankers	80,203 76
Invested in stocks and bonds	46,443 75	Interest account	6,624 11
Loans on stocks and bonds	62,702 70	Other liabilities	737 34
Loans on personal security	263,160 77		
Loans on other securities	9,583 42		
Money on hand	124,112 01		
Furniture, fixtures, and safes	5,000 00		
Expenses, taxes, etc.	5,944 91		
Other assets	29,898 88		
Total assets	\$709,128 71	Total liabilities	\$709,128 71

Examined by Commissioners Coleman and Watt.

COLUSA COUNTY.

COLUSA COUNTY BANK—COLUSA.

[April 10th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$20,000 00	Capital paid in coin	\$500,000 00
Real estate by foreclosure	9,128 43	Surplus fund	3,444 14
Loans on real estate	392,948 99	Due depositors	243,885 29
Invested in county warrants	1,222 70	Dividends unpaid	2,798 00
Loans on personal security	174,052 99	Other liabilities	269 63
Loans on other securities	12,345 51		
Money on hand	121,539 95		
Deposits in other banks	15,840 05		
Furniture, fixtures, and safes	2,537 29		
Other assets	781 15		
Total assets	\$750,397 06	Total liabilities	\$750,397 06

Examined by Commissioner Coleman.

CONTRA COSTA COUNTY.

BANK OF MARTINEZ—MARTINEZ.

[March 15th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$5,034 00	Capital paid in coin	\$100,000 00
Real estate by foreclosure	1,071 83	Surplus fund	26,679 68
Loans on real estate	98,147 00	Due depositors	141,927 49
Invested in county warrants	23,467 26	Other liabilities	487 00
Loans on county warrants	2,659 59		
Loans on personal security	71,853 17		
Loans on other securities	9,136 00		
Money on hand	46,033 47		
Deposits in other banks	2,240 74		
Furniture, fixtures, and safes	2,499 00		
Interest accrued (balance)	5,623 94		
Expenses, taxes, etc.	133 50		
Other assets	1,194 67		
Total assets	\$269,094 17	Total liabilities	\$269,094 17

Examined by Commissioner Coleman.

FRESNO COUNTY.

BANK OF FRESNO—FRESNO.

[March 10th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot.....	\$8,071 21	Capital paid in coin.....	\$47,600 00
Real estate by foreclosure.....	3,755 13	Surplus fund.....	1,742 51
Loans on real estate.....	10,030 00	Due depositors.....	24,088 09
Invested in stocks and bonds.....	773 02	Interest account.....	1,568 46
Loans on personal security.....	32,028 75		
Money on hand.....	14,895 36		
Deposits in other banks.....	3,916 50		
Expenses, taxes, etc.....	936 55		
Other assets.....	592 54		
Total assets.....	\$74,999 06	Total liabilities.....	\$74,999 06

Examined by Commissioner Watt.

HUMBOLDT COUNTY.

HUMBOLDT COUNTY BANK—EUREKA.

[April 28th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Real estate by foreclosure.....	\$18,102 24	Capital paid in coin.....	\$60,000 00
Loans on real estate.....	106,213 00	Surplus fund.....	112,808 52
Invested in stocks and bonds.....	3,620 54	Due depositors.....	78,040 62
Loans on stocks and bonds.....	9,335 49	Interest collected.....	9,245 11
Loans on personal security.....	54,445 42		
Money on hand.....	20,748 30		
Deposits in other banks.....	22,532 91		
Furniture, fixtures, and safes.....	2,000 00		
Interest accrued.....	21,534 73		
Expenses, taxes, etc.....	1,561 62		
Total assets.....	\$260,094 25	Total liabilities.....	\$260,094 25

Examined by Commissioner Murphy.

KERN COUNTY.

KERN VALLEY BANK—BAKERSFIELD.

[March 13th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot-----	\$2,771 17	Capital paid in coin-----	\$49,866 00
Real estate by foreclosure----	14,840 06	Surplus fund-----	523 34
Loans on real estate-----	44,695 79	Due depositors-----	35,328 96
Invested in county warrants-----	4,529 27	Due banks and bankers-----	29,536 35
Loans on stocks and bonds-----	3,286 27	Bills payable-----	10,000 00
Loans on personal security-----	33,786 23		
Money on hand-----	4,740 25		
Deposits in other banks-----	1,430 20		
Furniture, fixtures, and safes-----	3,755 14		
Interest accrued-----	10,016 93		
Other assets-----	1,403 34		
Total assets-----	\$125,254 65	Total liabilities-----	\$125,254 65

Examined by Commissioner Watt.

LAKE COUNTY.

BANK OF LAKE—LAKEPORT.

[April 8th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot-----	\$9,251 26	Capital paid in coin-----	\$98,180 00
Real estate by foreclosure----	25,981 48	Due depositors-----	37,492 47
Loans on real estate-----	52,034 82	Due banks and bankers-----	15,584 34
Invested in stocks and bonds-----	3,422 82	Other liabilities-----	1,010 80
Loans on stocks and bonds-----	1,260 00		
Loans on personal security-----	27,398 12		
Loans on other securities-----	904 00		
Money on hand-----	8,517 65		
Deposits in other banks-----	652 20		
Furniture, fixtures, and safes-----	2,041 00		
Interest accrued-----	4,790 88		
Expenses, taxes, etc.-----	1,225 15		
Other assets-----	14,788 23		
Total assets-----	\$152,267 61	Total liabilities-----	\$152,267 61

Examined by Commissioner Murphy.

FARMERS' SAVINGS BANK—LAKEPORT.

[April 10th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot.....	\$16,062 99	Capital paid in coin.....	\$58,360 00
Loans on real estate.....	67,849 57	Due depositors.....	69,858 34
Invested in stocks and bonds.....	1,126 07	Interest account.....	2,438 21
Loans on personal security.....	18,221 82	Other liabilities.....	102 10
Loans on other securities.....	8,413 00		
Money on hand.....	5,541 16		
Deposits in other banks.....	6,755 58		
Furniture, fixtures, and safes.....	1,492 25		
Interest accrued.....	206 13		
Expenses, taxes, etc.....	5,360 08		
Total assets.....	\$130,758 65	Total liabilities.....	\$130,758 65

Examined by Commissioner Murphy.

LOS ANGELES COUNTY.

BANK OF ANAHEIM—ANAHEIM.

[November 21st, 1878.]

STATEMENT.

Assets.		Liabilities.	
Loans on real estate.....	\$13,435 21	Capital paid in coin.....	\$20,000 00
Loans on stocks.....	3,502 00	Surplus fund.....	5,574 57
Loans on other securities.....	27,410 78	Due depositors.....	19,977 63
Money on hand.....	5,044 78	Due banks and bankers.....	24,966 58
Deposits in other banks.....	16,353 73		
Furniture, fixtures, and safes.....	4,772 28		
Total assets.....	\$70,518 78	Total liabilities.....	\$70,518 78

Examined by Commissioner Murphy.

COMMERCIAL BANK OF LOS ANGELES—LOS ANGELES.

[November 16th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot-----	\$37,000 00	Capital paid in coin-----	\$177,000 00
Real estate by foreclosure----	500 00	Surplus fund-----	12,368 47
Invested in bonds and war-		Due depositors-----	170,965 10
rants-----	12,159 82		
Loans on personal security--	} 243,478 93		
Loans on other securities----			
Money on hand-----	38,231 72		
Deposits in other banks-----	23,510 46		
Furniture, fixtures, and safes--	5,380 60		
Bullion-----	72 04		
Total assets-----	\$360,333 57	Total liabilities-----	\$360,333 57

Examined by Commissioner Murphy.

FARMERS' AND MERCHANTS' BANK OF LOS ANGELES—LOS ANGELES.

[September 12th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot-----	\$18,000 00	Capital paid in coin-----	\$475,000 00
Real estate by foreclosure----	10,518 70	Surplus fund-----	50,000 00
Invested in bonds and war-		Due depositors-----	347,639 02
rants-----	16,050 37	Due banks and bankers-----	1,086 28
Loans and discounts-----	714,477 58	Undivided profits, etc.-----	18,382 47
Money on hand-----	105,306 26	Dividends unpaid-----	600 00
Deposits in other banks-----	19,740 06		
Furniture, fixtures, and safes--	8,614 80		
Total assets-----	\$892,707 77	Total liabilities-----	\$892,707 77

Examined by Commissioner Murphy.

LOS ANGELES COUNTY BANK—LOS ANGELES.

[November 13th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Real estate by foreclosure.....	\$19,644 71	Capital paid in coin.....	\$286,600 00
Loans on real estate.....	326,796 43	Reserve fund.....	47,764 44
Invested in United States bonds.....	25,000 00	Due depositors.....	162,304 56
Loans on other securities.....	105,917 94	Interest collected.....	11,760 67
Money on hand.....	26,959 71	Other liabilities.....	524 54
Deposits in other banks.....	2,735 42		
Furniture, fixtures, and safes.....	1,900 00		
Total assets.....	\$508,954 21	Total liabilities.....	\$508,954 21

Examined by Commissioner Murphy.

MARIN COUNTY.

BANK OF TOMALES—TOMALES.

[March 31st, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot.....	\$4,963 56	Capital paid in coin.....	\$60,000 00
Loans on real estate.....	73,227 50	Surplus fund.....	19,531 03
Invested in county warrants.....	181 40	Due depositors.....	58,298 19
Loans on stocks and bonds.....	2,572 00		
Loans on personal security.....	48,659 61		
Money on hand.....	2,724 29		
Deposits in other banks.....	5,500 86		
Total assets.....	\$137,829 22	Total liabilities.....	\$137,829 22

Examined by Commissioner Watt.

MENDOCINO COUNTY.

BANK OF MENDOCINO—MENDOCINO CITY.

[May 24th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Real estate by foreclosure	\$10,283 06	Reserve fund	\$8,055 95
Loans on real estate	181,663 10	Due depositors	223,267 04
Loans on stocks	15,000 00	Interest, rents, etc.	1,143 13
Loans on other securities	3,213 66		
Money on hand	5,767 69		
Deposits in other banks	15,543 71		
Furniture, fixtures, and safes ..	139 00		
Expenses, taxes, etc.	809 73		
Other assets	46 17		
Total assets	\$232,466 12	Total liabilities	\$232,466 12

Examined by Commissioner Murphy.

MENDOCINO DISCOUNT BANK—MENDOCINO CITY.

[May 24th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Loans on real estate	\$6,177 34	Capital paid in coin	\$23,200 00
Invested in county warrants ..	2,246 81	Surplus fund	78 08
Loans on personal security ..	7,823 60	Due depositors	1,169 10
Deposits in other banks	18 17	Interest account	119 75
Furniture	80 00	Discounts, etc.	1,475 39
Expenses, taxes, etc.	129 03		
Due from Mendocino Lumber Company, and drafts remit- ted them	8,619 41		
Other assets	947 96		
Total assets	\$26,042 32	Total liabilities	\$26,042 32

Examined by Commissioner Murphy.

BANK OF UKIAH—UKIAH CITY.

[April 12th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot.....	\$15,572 00	Capital paid in coin.....	\$206,000 00
Loans on real estate.....	157,743 00	Surplus fund.....	4,216 00
Invested in stocks and bonds.....	2,891 00	Due depositors.....	38,646 00
Loans on stocks and bonds.....	3,445 00	Due banks and bankers.....	28,468 00
Loans on personal security.....	116,022 00	Interest account.....	10,647 00
Money on hand.....	6,286 00	Other liabilities.....	14,903 00
Expenses, taxes, etc.....	921 00		
Total assets.....	\$302,880 00	Total liabilities.....	\$302,880 00

Examined by Commissioner Murphy.

MERCED COUNTY.

MERCED BANK—MERCED.

[March 15th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot.....	\$11,221 14	Capital paid in coin.....	\$49,450 00
Real estate by foreclosure.....	2,704 93	Surplus fund.....	1,752 79
Loans on real estate.....	36,793 65	Due depositors.....	34,341 70
Invested in county warrants.....	190 77	Due banks and bankers.....	4,369 08
Loans on stocks and bonds.....	439 43	Dividends unpaid.....	74 60
Loans on personal security.....	23,543 43		
Loans on other securities.....	150 00		
Money on hand.....	12,048 20		
Deposits in other banks.....	492 84		
Furniture, fixtures, and safes.....	2,403 78		
Total assets.....	\$89,988 17	Total liabilities.....	\$89,988 17

Examined by Commissioner Watt.

MERCED SECURITY SAVINGS BANK—MERCED.

[March 15th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$11,826 24	Capital paid in coin	\$30,000 00
Real estate by foreclosure	432 43	Reserve fund	8,764 88
Loans on real estate	106,593 48	Due depositors	172,588 72
Invested in county warrants	681 00	Interest collected	1,408 70
Loans on county warrants	631 25	Profit and loss	123 09
Loans on other securities	45,141 06		
Money on hand	21,659 28		
Deposits in other banks	20,487 85		
Interest accrued	3,769 85		
Expenses, taxes, etc.	1,662 95		
Total assets	\$212,885 39	Total liabilities	\$212,885 39

Examined by Commissioner Watt.

MONTEREY COUNTY.

SALINAS CITY BANK—SALINAS CITY.

[March 18th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$14,831 00	Capital paid in coin	\$200,000 00
Real estate by foreclosure	4,206 43	Surplus fund	20,851 17
Loans on real estate	143,828 35	Due depositors	57,442 23
Invested in county warrants	10,562 37	Interest account	4,261 52
Loans on personal security	26,130 42		
Loans on other securities	47,057 70		
Money on hand	14,125 26		
Deposits in other banks	17,478 40		
Furniture, fixtures, and safes	2,300 00		
Expenses, taxes, etc.	2,034 99		
Total assets	\$282,554 92	Total liabilities	\$282,554 92

Examined by Commissioner Murphy.

NAPA COUNTY.

BANK OF NAPA—NAPA CITY.

[March 25th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot -----	\$20,000 00	Capital paid in coin -----	\$250,000 00
Real estate by foreclosure -----	76,533 04	Surplus fund -----	56,238 92
Loans on real estate -----	257,936 46	Due depositors -----	218,908 00
Invested in stocks and war- rants -----	11,240 98	Due banks and bankers -----	41,990 75
Loans on stocks -----	66,184 46	Dividends unpaid -----	1,035 74
Loans on personal security --	80,319 89		
Loans on other securities -----	28,739 22		
Money on hand -----	27,043 03		
Deposits in other banks -----	176 33		
Total assets -----	\$568,173 41	Total liabilities -----	\$568,173 41

Examined by Commissioners Coleman and Watt.

NAPA VALLEY SAVINGS AND LOAN SOCIETY—NAPA CITY.

[March 26th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Real estate by foreclosure ---	\$15,266 57	Capital paid in coin -----	None.
Loans on real estate -----	354,918 81	Reserve fund -----	\$44,976 50
Invested in bonds -----	18,150 00	Due depositors -----	404,203 03
Money on hand -----	19,507 34		
Deposits in other banks -----	19,000 00		
Interest accrued (balance)---	22,336 81		
Total assets -----	\$449,179 53	Total liabilities -----	\$449,179 53

Examined by Commissioners Coleman and Watt.

NEVADA COUNTY.

CITIZENS' BANK—NEVADA CITY.

[September 27th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$6,000 00	Capital paid in coin	\$50,000 00
Real estate by foreclosure	6,989 41	Surplus fund	337 68
Invested in stocks and war-		Due depositors	69,870 60
rants	18,571 49	Due banks and bankers	1,285 54
Loans on personal security ..	49,762 55		
Money on hand	21,271 78		
Deposits in other banks	18,898 59		
Total assets	\$121,493 82	Total liabilities	\$121,493 82

Examined by Commissioner Watt.

SACRAMENTO COUNTY.

CAPITAL SAVINGS BANK—SACRAMENTO.

[November 16th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$100,000 00	Capital paid in coin	\$300,000 00
Real estate by foreclosure	368,063 90	Reserve fund	7,937 11
Loans on real estate	1,184,012 43	Due depositors	2,521,474 08
Invested in stocks and bonds ..	26,688 37	Due banks and bankers	233,966 54
Loans on stocks and bonds	86,910 23	Interest account	20,422 44
Loans on personal security	789,398 24	Other liabilities	1,490 15
Loans on other securities	177,286 87		
Money on hand	71,933 55		
Deposits in other banks	39,703 79		
Furniture, fixtures, and safes ..	3,450 00		
Expenses, taxes, etc.	15,129 39		
Other assets	222,713 55		
Total assets	\$3,085,290 32	Total liabilities	\$3,085,290 32

Examined by Commissioners Coleman and Watt.

SACRAMENTO BANK—SACRAMENTO.

[November 15th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Real estate by foreclosure.....	\$1,100 00	Capital paid in coin.....	\$50,000 00
Loans on real estate.....	921,255 33	Reserve fund.....	46,392 52
Loans on other securities.....	2,084 50	Due depositors.....	857,558 36
Money on hand.....	71,576 38	Interest account.....	54,381 05
Deposits in other banks.....	4,773 86	Other liabilities.....	1,324 35
Expenses, taxes, etc.....	5,866 21		
Total assets.....	\$1,009,656 28	Total liabilities.....	\$1,009,656 28

Examined by Commissioners Coleman and Watt.

SACRAMENTO SAVINGS BANK—SACRAMENTO.

[November 15th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot, safes, etc.....	\$25,275 46	Reserve fund.....	\$82,962 43
Real estate by foreclosure.....	77,207 50	Due depositors.....	1,850,415 91
Loans on real estate.....	1,911,239 19	Mortgage tax.....	43,406 01
Loans on other securities.....	800 00	Interest and rents collected.....	99,463 58
Money on hand.....	32,193 37	Contingent dividend.....	1,469 62
Deposits in other banks.....	24,684 10	Other liabilities.....	4,414 50
Expenses, taxes, etc.....	10,732 43		
Total assets.....	\$2,082,132 05	Total liabilities.....	\$2,082,132 05

Examined by Commissioners Coleman and Watt.

SAN BENITO COUNTY.

BANK OF HOLLISTER—HOLLISTER.

[March 15th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot -----	\$8,500 00	Capital paid in coin -----	\$181,600 00
Real estate by foreclosure -----	5,030 00	Due depositors -----	141,748 01
Loans on real estate -----	174,412 40	Other liabilities -----	1,417 51
Invested in county warrants -----	520 00		
Loans on personal security -----	60,293 51		
Loans on other securities -----	43,716 58		
Money on hand -----	11,728 26		
Deposits in other banks -----	15,273 64		
Furniture, fixtures, and safes -----	3,109 69		
Other assets -----	2,181 44		
Total assets -----	\$324,765 52	Total liabilities -----	\$324,765 52

Examined by Commissioner Murphy.

SANTA BARBARA COUNTY.

SANTA BARBARA COUNTY BANK—SANTA BARBARA.

[December 2d, 1878.]

STATEMENT.

Assets.		Liabilities.	
Loans on real estate -----	\$6,284 00	Capital paid in coin -----	\$70,000 00
Loans on personal security -----	115,859 40	Surplus fund -----	5,619 93
Loans on other securities -----		Due depositors -----	111,488 51
Money on hand -----	27,991 04	Interest account -----	1,283 19
Deposits in other banks -----	34,972 53		
Furniture, fixtures, and safes -----	2,298 56		
Expenses since Nov. 1, 1878 -----	436 53		
Other assets -----	549 57		
Total assets -----	\$188,391 63	Total liabilities -----	\$188,391 63

Examined by Commissioner Murphy.

SANTA CLARA COUNTY.

COMMERCIAL AND SAVINGS BANK OF SAN JOSÉ—SAN JOSÉ.

[December 11th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Real estate by foreclosure ..	\$45,689 68	Capital paid in coin	\$300,000 00
Loans on real estate	627,635 85	Reserve fund	44,485 82
Invested in county warrants ..	67,020 98	Due depositors	739,359 67
Loans on stocks	65,058 70	Interest account	50,943 15
Loans on personal security ..	145,706 42		
Loans on other securities	96,605 43		
Money on hand	59,200 80		
Deposits in other banks	8,115 54		
Furniture, fixtures, and safes ..	5,617 37		
Expenses, taxes, etc.	10,137 87		
Other assets	4,000 00		
Total assets	\$1,134,788 64	Total liabilities	\$1,134,788 64

Examined by Commissioners Coleman and Watt.

BANK OF SAN JOSÉ—SAN JOSÉ.

[December 13th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$120,000 00	Capital paid in coin	\$250,000 00
Real estate by foreclosure ..	8,935 17	Surplus fund	100,000 00
Loans on real estate	356,682 50	Due depositors	602,662 39
Invested in stocks and bonds ..	44,490 25	Due banks and bankers	901 95
Loans on stocks	67,962 55	Interest account	31,089 44
Loans on personal security ..	266,931 81	Undivided profits	5,176 54
Loans on other securities	33,205 98		
Money on hand	55,211 21		
Deposits in other banks	10,616 38		
Furniture, fixtures, and safes ..	4,717 70		
Expenses, taxes, etc.	9,608 02		
Other assets	11,468 75		
Total assets	\$989,830 32	Total liabilities	\$989,830 32

Examined by Commissioners Coleman and Watt.

SAN JOSÉ SAVINGS BANK—SAN JOSÉ.

[December 12th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$53,773 14	Capital paid in coin	\$300,000 00
Real estate by foreclosure	34,617 31	Reserve fund	39,497 51
Loans on real estate	554,866 16	Due depositors	584,505 48
Loans on stocks and bonds	4,648 38	Due banks and bankers	25,547 36
Loans on personal security	181,525 86	Interest collected	12,440 38
Loans on other securities	13,134 95	Other liabilities	81 00
Money on hand	87,960 60		
Deposits in other banks	15,722 15		
Furniture, fixtures, and safes	4,664 59		
Expenses, taxes, etc.	10,054 12		
Other assets	1,104 47		
Total assets	\$962,071 73	Total liabilities	\$962,071 73

Examined by Commissioners Coleman and Watt.

BANK OF GILROY—GILROY.

[March 12th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Real estate by foreclosure	\$3,978 51	Capital paid in coin	\$68,000 00
Loans on real estate	52,206 00	Due depositors	64,720 07
Loans on stocks and bonds	6,492 34	Other liabilities	478 38
Loans on personal security	35,432 49		
Loans on other securities	7,779 60		
Money on hand	7,409 45		
Deposits in other banks	13,015 74		
Furniture, fixtures, and safes	2,196 82		
Interest in arrears	3,453 94		
Other assets	1,233 56		
Total assets	\$133,198 45	Total liabilities	\$133,198 45

Examined by Commissioner Murphy.

BANK OF SANTA CLARA COUNTY—SANTA CLARA.

[March 11th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$9,884 52	Capital paid in coin	\$105,000 00
Real estate by foreclosure	3,481 16	Surplus fund	12,235 22
Loans on real estate	94,612 70	Due depositors	126,506 33
Invested in stocks and war- rants	2,722 11	Due banks and bankers	4,624 66
Loans on stocks and bonds ..	10,814 00		
Loans on personal security ..	72,009 26		
Loans on other securities	40,687 72		
Money on hand	9,404 94		
Furniture, fixtures, and safes ..	2,310 00		
Interest in arrears	1,884 58		
Expenses, taxes, etc.	555 22		
Total assets	\$248,366 21	Total liabilities	\$248,366 21

Examined by Commissioner Murphy.

SANTA CRUZ COUNTY.

SANTA CRUZ BANK OF SAVINGS AND LOAN—SANTA CRUZ.

[May 10th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Undivided one-half of bank- ing house and lot	\$6,652 73	Capital paid in coin	\$20,000 00
Real estate by foreclosure	29,914 41	Due depositors	193,038 52
Loans on real estate	131,784 96	Interest due depositors	6,627 00
Invested in stocks	1,500 00		
Loans on stocks	15,126 80		
Loans on other securities	3,600 00		
Money on hand	9,920 88		
Furniture, fixtures, and safes ..	2,000 00		
Interest accrued	8,728 72		
Other assets	591 24		
Total assets	\$209,819 74	Total liabilities	\$219,665 52
		Total assets	209,819 74
		Impairment of capital	\$9,845 78

Examined by Commissioners Coleman and Watt.

BANK OF SANTA CRUZ COUNTY—SANTA CRUZ.

[May 12th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Undivided one-half of bank- ing house and lot	\$6,652 73	Capital paid in coin	\$79,600 00
Real estate by foreclosure	11,142 83	Surplus fund	7,169 18
Loans on real estate	61,271 21	Due depositors	46,357 73
Invested in county warrants	779 56	Due banks and bankers	15,405 02
Loans on stocks	2,419 92		
Loans on personal security	29,212 06		
Loans on other securities	3,819 19		
Money on hand	19,088 05		
Deposits in other banks	1,109 75		
Furniture, fixtures, and safes	3,900 00		
Interest accrued	7,405 61		
Other assets	1,731 02		
Total assets	\$148,531 93	Total liabilities	\$148,531 93

Examined by Commissioners Coleman and Watt.

BANK OF WATSONVILLE—WATSONVILLE.

[March 18th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$12,883 97	Capital paid in coin	\$140,000 00
Real estate by foreclosure	6,885 55	Due depositors	115,323 51
Loans on real estate	142,520 72	Bills payable	25,000 00
Invested in county warrants	109 75		
Loans on stocks and bonds	7,350 00		
Loans on personal security	37,792 91		
Loans on other securities	5,653 84		
Money on hand	29,677 41		
Deposits in other banks	20,517 66		
Furniture, fixtures, and safes	2,129 00		
Other assets	1,716 25		
Total assets	\$267,237 06	Total liabilities	\$280,323 51
		Total assets	267,237 06
		Impairment of capital	\$13,086 45

Examined by Commissioner Murphy.

SAN DIEGO COUNTY.

COMMERCIAL BANK OF SAN DIEGO—SAN DIEGO.

[November 23d, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$20,879 69	Capital paid in coin	\$75,000 00
Real estate by foreclosure	8,686 87	Due depositors	165,512 26
Loans on real estate	44,983 49	Due banks and bankers	226 59
Loans on stocks and warrants	16,591 49	Interest, rents, etc.	9,052 40
Loans on other securities	121,058 97		
Money on hand	20,847 04		
Deposits in other banks	9,545 05		
Furniture, fixtures, and safes	4,848 66		
Expenses, taxes, etc.	2,236 47		
Bullion	113 52		
Total assets	\$249,791 25	Total liabilities	\$249,791 25

Examined by Commissioner Murphy.

BANK OF SAN DIEGO—SAN DIEGO.

[November 27th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$15,705 49	Capital paid in coin	\$63,000 00
Real estate by foreclosure	2,612 24	Surplus fund	1,435 60
Invested in city and county warrants	10,075 61	Due depositors	55,340 98
Loans on personal security	69,506 04		
Money on hand	15,431 51		
Deposits in other banks	2,095 17		
Furniture, fixtures, and safes	2,216 20		
Expenses, taxes, etc.	500 16		
Other assets	1,634 16		
Total assets	\$119,776 58	Total liabilities	\$119,776 58

Examined by Commissioner Murphy.

SAN JOAQUIN COUNTY.

SAN JOAQUIN VALLEY BANK—STOCKTON.

[November 12th 1878.]

STATEMENT.

Assets.		Liabilities.	
Real estate by foreclosure	\$7,388 62	Capital paid in coin	\$139,650 00
Loans on real estate	31,715 42	Surplus fund	40 85
Invested in stocks	4,233 96	Due depositors	153,509 53
Loans on stocks and bonds	7,124 21	Interest account	2,639 60
Loans on personal security	91,589 87	Other liabilities	464 81
Loans on other securities	11,902 49		
Money on hand	120,509 33		
Deposits in other banks	9,570 37		
Furniture, fixtures, and safes	4,241 78		
Interest accrued	6,854 74		
Expenses, taxes, etc.	957 40		
Other assets	216 60		
Total assets	\$296,304 79	Total liabilities	\$296,304 79

Examined by Commissioners Coleman and Watt.

BANK OF STOCKTON—STOCKTON.

[November 13th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Real estate by foreclosure	\$40,000 00	Capital paid in coin	\$305,893 14
Loans on real estate	6,323 26	Due depositors	24,649 06
Invested in stocks	1,100 00	Due banks and bankers	2,546 83
Loans on stocks	3,530 00	Interest and exchange	1,029 12
Loans on personal security	} 168,289 44		
Loans on other securities			
Money on hand	29,433 75		
Furniture, fixtures, and safes	2,079 62		
Interest accrued	14,442 00		
Total assets	\$265,198 07	Total liabilities	\$334,118 15
		Less total assets	265,198 07
		Deficit as regards stock-holders	\$68,920 08

Examined by Commissioners Coleman and Watt.

STOCKTON SAVINGS AND LOAN SOCIETY—STOCKTON.

[November 9th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Real estate by foreclosure-----	\$68,739 94	Capital paid in coin-----	\$500,000 00
Loans on real estate-----	860,590 48	Reserve fund-----	23,914 57
Invested in stocks and bonds-----	6,436 00	Due depositors-----	1,218,720 11
Loans on stocks and bonds-----	16,267 40	Interest collected-----	88,161 04
Loans on personal security-----	83,665 89	Other liabilities-----	1,389 62
Loans on other securities-----	320,355 19		
Money on hand-----	249,177 11		
Deposits in other banks-----	108,229 13		
Furniture, fixtures, and safes-----	5,565 35		
Interest accrued-----	103,955 84		
Expenses, taxes, etc.-----	9,203 01		
Total assets-----	\$1,832,185 34	Total liabilities-----	\$1,832,185 34

Examined by Commissioners Coleman and Watt.

SAN LUIS OBISPO COUNTY.

BANK OF SAN LUIS OBISPO—SAN LUIS OBISPO.

[December 18th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot-----	\$23,037 39	Capital paid in coin-----	\$185,000 00
Real estate by foreclosure-----	14,675 39	Due depositors-----	75,270 70
Invested in stocks and bonds-----	23,511 63	Bills payable-----	75,000 00
Loans on personal security-----	221,119 00	Interest, exchange, etc.-----	13,804 35
Loans on other securities-----			
Money on hand-----	18,963 78		
Deposits in other banks-----	12,842 72		
Profit and loss-----	10,209 98		
Expenses, taxes, etc.-----	3,387 06		
Other assets-----	21,328 10		
Total assets-----	\$349,075 05	Total liabilities-----	\$349,075 05

Examined by Commissioner Murphy.

SAN FRANCISCO COUNTY.

ANGLO-CALIFORNIAN BANK (LIMITED)—SAN FRANCISCO BRANCH.

[February 21st, 1879.]

STATEMENT.

Assets.		Liabilities.	
Loans on real estate	\$431,294 66	Due head office, London	\$2,987,685 50
Loans on stocks and bonds	316,962 49	Due depositors	1,031,462 77
Loans on personal security	1,581,533 80	Due interior banks and bankers	316,227 26
Loans on other securities	337,304 78	Due foreign banks and bankers	162,750 67
Money on hand	847,614 01	Cashier's checks and drafts on this bank outstanding	55,828 39
Due from interior banks	177,624 42	Undivided profits	89,470 20
Due from eastern banks and bankers	171,167 54		
Silver bullion on hand	117,321 83		
Silver in transit to London	578,017 88		
Due on letters credit	58,050 77		
Remittances in transit	26,532 61		
Total assets	\$4,643,424 79	Total liabilities	\$4,643,424 79

Examined by all the Commissioners.

BANK OF BRITISH COLUMBIA—SAN FRANCISCO BRANCH.

[February 20th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$70,465 86	Due head office, London	\$960,781 12
Real estate by foreclosure	6,000 00	Due other branches	183,127 30
Loans on real estate	10,308 06	Due depositors	288,927 41
Invested in stocks and bonds	79,542 42	Due banks and bankers	6,292 60
Loans on stocks and bonds	479,552 88		
Loans on personal security	293,996 66		
Loans on other securities	93,654 33		
Money on hand	405,608 22		
Total assets	\$1,439,128 43	Total liabilities	\$1,439,128 43

Examined by Commissioners Coleman, Watt, and Murphy.

BANK OF BRITISH NORTH AMERICA—SAN FRANCISCO
AGENCY.

[February 14th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Loans on stocks and bonds	\$546,530 62	Due head office, London	\$822,081 80
Loans on personal security	120,488 77	Due depositors	225,124 40
Loans on other securities	39,549 73	Due banks and bankers	3,572 94
Money on hand	344,210 02		
Total assets	\$1,050,779 14	Total liabilities	\$1,050,779 14

Examined by Commissioners Coleman and Murphy.

BANK OF CALIFORNIA—SAN FRANCISCO.

[February 15th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$350,000 00	Capital paid in coin	\$5,000,000 00
Real estate by foreclosure	419,083 51	Surplus	117,615 59
Loans on real estate	1,092,598 68	Due depositors	5,030,424 26
Invested in stocks and bonds	171,647 32	Due banks and bankers	210,955 90
Loans on stocks and bonds	982,608 25	Other liabilities	3,001 50
Loans on personal security	3,191,360 46		
Loans on other securities	142,673 03		
Money on hand	2,124,382 60		
Due from banks and bankers	180,021 60		
Due from Agencies in Nevada	1,278,598 28		
Due from New York Agency	364,791 39		
Other assets	64,232 13		
Total assets	\$10,361,997 25	Total liabilities	\$10,361,997 25

Examined by Commissioners Coleman, Watt, and Murphy.

CALIFORNIA SAVINGS AND LOAN SOCIETY—SAN FRANCISCO.

[October 12th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Real estate by foreclosure	\$61,097 18	Capital paid in coin	\$63,000 00
Loans on real estate	226,835 59	Reserve fund	6,577 93
Invested in bonds	19,050 00	Due depositors	274,592 33
Loans on stocks	12,500 00	Interest account	1,575 96
Loans on other securities	11,600 00	Other liabilities	247 50
Money on hand	12,408 71		
Furniture	200 00		
Expenses, taxes, etc.	2,302 24		
Total assets	\$345,993 72	Total liabilities	\$345,993 72

Examined by Commissioners Coleman and Watt.

FRANCO-AMERICAN SAVINGS BANK—SAN FRANCISCO.

[October 9th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Loans on real estate	\$147,276 76	Capital paid in coin	\$100,000 00
Invested in city and county warrants	7,159 00	Due depositors	90,445 46
Loans on stocks and bonds ..	10,075 00	Other liabilities	1,739 14
Loans on other securities	11,700 00		
Money on hand	9,449 23		
Furniture, fixtures, and safes ..	3,224 37		
Interest accrued	1,370 27		
Expenses, taxes, etc.	1,929 97		
Total assets	\$192,184 60	Total liabilities	\$192,184 60

Examined by Commissioners Coleman and Murphy.

GERMAN SAVINGS AND LOAN SOCIETY—SAN FRANCISCO.

[October 2d, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$85,000 00	Capital paid in coin	\$154,250 00
Real estate by foreclosure	61,228 22	Reserve fund	65,000 00
Loans on real estate	8,950,450 58	Due depositors	9,309,266 76
Invested in bonds	81,000 00	Interest collected	210,012 66
Loans on bonds	7,000 00	Other liabilities	5,479 76
Money on hand	402,788 14		
Office furniture	555 00		
Interest accrued	123,761 99		
Expenses	7,909 76		
Interest on deposits with- drawn between dividend days	1,851 74		
License and personal prop- erty taxes	3,660 87		
Insurance premiums	15,802 88		
Total assets	\$9,744,009 18	Total liabilities	\$9,744,009 18

Examined by all the Commissioners.

GRANGERS' BANK OF CALIFORNIA—SAN FRANCISCO.

[February 10th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Undivided two-thirds of banking house and lot	\$77,200 00	Capital paid in coin	\$387,200 00
Real estate by foreclosure	3,970 45	Deposit to apply to capital stock	9,780 00
Loans on real estate	75,738 02	Due depositors	80,950 18
Loans on stocks and bonds	59,293 28	Due banks and bankers	3,580 36
Loans on personal securities	139,895 41	Bills payable	40,000 00
Loans on other securities	126,622 71		
Money on hand	14,690 62		
Deposits in other banks	5,785 27		
Furniture, fixtures, and safes	2,826 30		
Interest accrued	13,337 59		
Other assets	2,150 89		
Total assets	\$521,510 54	Total liabilities	\$521,510 54

Examined by all the Commissioners.

HIBERNIA SAVINGS AND LOAN SOCIETY—SAN FRANCISCO.

[October 14th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$199,812 98	Reserve fund	\$1,245,654 15
Real estate by foreclosure	556,055 74	Due depositors	14,605,998 55
Loans on real estate	13,009,022 64	Interest collected	210,294 26
Invested in United States bonds	1,568,316 53	Interest collected on United States bonds	5,957 50
Money on hand	218,571 95	Other liabilities	26,234 78
Furniture, fixtures, and safes	696 85		
Interest accrued	523,619 27		
Expenses, taxes, etc.	15,091 35		
Interest between dividend days	2,951 93		
Total assets	\$16,094,139 24	Total liabilities	\$16,094,139 24

Examined by all the Commissioners.

HUMBOLDT SAVINGS AND LOAN SOCIETY—SAN FRANCISCO.

[October 4th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$73,105 89	Capital paid in coin	\$80,000 00
Real estate by foreclosure	27,885 73	Reserve fund	25,872 17
Loans on real estate	958,519 44	Due depositors	1,069,437 80
Invested in United States bonds	52,828 36	Other liabilities	160 00
Loans on Gas Company's stock	500 00		
Loans on other securities	14,311 78		
Money on hand	15,185 19		
Deposits in other banks	21,633 68		
Furniture, fixtures, and safes	3,192 48		
Expenses, taxes, etc.	5,997 35		
Other assets	2,310 07		
Total assets	\$1,175,469 97	Total liabilities	\$1,175,469 97

Examined by Commissioners Coleman and Watt.

LONDON AND SAN FRANCISCO BANK (LIMITED)—SAN FRANCISCO BRANCH.

[February 26th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Real estate by foreclosure----	\$69,350 31	Due head office, London ----	\$4,466,036 21
Loans on real estate -----	345,196 71	Due depositors -----	1,248,654 98
Invested in stocks and bonds----	5,000 00	Due banks and bankers ----	135,671 29
Loans on stocks and bonds ----	968,207 21	Other liabilities -----	42,951 08
Loans on personal security ----	1,737,273 09		
Loans on other securities-----	972,413 33		
Money on hand-----	734,622 23		
Due from interior banks and bankers -----	187,035 72		
Due from eastern and foreign banks and bankers-----	122,888 61		
Sundry debtors for drafts accepted by head office under letters of credit but not matured -----	512,851 74		
Other assets-----	238,494 61		
Total assets -----	\$5,893,313 56	Total liabilities-----	\$5,893,313 56

Examined by all the Commissioners.

NEVADA BANK OF SAN FRANCISCO—SAN FRANCISCO.

[March 1st, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot-----	\$1,000,000 00	Capital paid in coin -----	\$10,000,000 00
Real estate by foreclosure ----	824,622 19	Surplus fund-----	3,500,000 00
Loans on real estate -----	1,039,664 02	Due depositors -----	6,883,264 42
Invested in stocks and bonds----	4,529,800 00	Due banks and bankers ----	498,605 36
Loans on stocks and bonds ----	3,660,066 18	Interest collected -----	142,778 67
Loans on personal security ----	1,274,510 36	Undivided profits-----	149,970 31
Loans on other securities-----	897,298 42	Profit and loss-----	178,472 33
Money on hand-----	3,336,479 40		
Due from other banks and from Agencies of this bank	4,136,477 22		
Furniture, fixtures, and safes	3,867 00		
Silver and trade dollars -----	605,203 56		
Expenses, taxes, etc. -----	19,505 07		
Other assets-----	25,597 67		
Total assets -----	\$21,353,091 09	Total liabilities-----	\$21,353,091 09

Examined by Commissioners Coleman and Watt.

PACIFIC BANK—SAN FRANCISCO.

[December 31st, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot-----	\$150,000 00	Capital paid in coin-----	\$1,000,000 00
Real estate by foreclosure-----	4,504 50	Surplus fund-----	497,204 12
Loans on real estate-----	213,463 75	Due depositors-----	676,589 36
Invested in United States bonds-----	116,100 00	Due banks and bankers-----	30,339 09
Invested in stocks-----	5,340 00	Dividends unpaid-----	1,002 50
Loans on stocks and bonds-----	248,789 33		
Loans on personal security-----	712,289 75		
Loans on other securities-----	206,336 39		
Money on hand-----	506,916 25		
Deposits in other banks-----	41,395 10		
Total assets-----	\$2,205,135 07	Total liabilities-----	\$2,205,135 07

Examined by Commissioners Coleman and Watt.

SAN FRANCISCO SAVINGS UNION—SAN FRANCISCO.

[October 7th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot-----	\$105,096 42	Capital paid in coin-----	\$400,000 00
Real estate by foreclosure-----	39,987 72	Reserve fund-----	49,159 74
Loans on real estate-----	8,520,923 05	Due depositors-----	9,206,336 01
Invested in United States and other bonds-----	426,247 50	Interest collected-----	212,116 59
Loans on stocks and bonds-----	616,400 00	Contingent fund-----	8,460 76
Money on hand-----	154,400 70	Rents collected-----	1,816 69
Furniture, fixtures, and safes-----	2,666 22		
Expenses, taxes, etc.-----	11,562 26		
Interest on accounts closed between dividend days-----	605 92		
Total assets-----	\$9,877,889 79	Total liabilities-----	\$9,877,889 79

Examined by all the Commissioners.

SAVINGS AND LOAN SOCIETY—SAN FRANCISCO.

[August 21st, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$75,000 00	Capital paid in coin	\$500,000 00
Real estate by foreclosure	464,395 30	Reserve fund	518,750 00
Loans on real estate	7,375,125 69	Due depositors	8,171,355 31
Invested in stocks and bonds	582,201 54	Other liabilities	79,339 46
Loans on stocks and bonds	640,227 91		
Money on hand	118,821 70		
Other assets	13,672 63		
Total assets	\$9,269,114 77	Total liabilities	\$9,269,444 77

Examined by all the Commissioners.

SECURITY SAVINGS BANK—SAN FRANCISCO.

[October 31st, 1878.]

STATEMENT.

Assets.		Liabilities.	
Loans on real estate	\$1,794,673 15	Capital paid in coin	\$150,000 00
Invested in stocks and bonds	9,975 00	Due depositors	2,314,211 23
Loans on stocks and bonds	612,636 25	Interest collected	40,085 43
Loans on other securities	29,000 00	Other liabilities	12,891 15
Money on hand	12,772 58		
Deposits in other banks	52,494 96		
Furniture, fixtures, and safes	150 00		
Expenses, taxes, etc.	5,485 87		
Total assets	\$2,517,187 81	Total liabilities	\$2,517,187 81

Examined by Commissioners Coleman and Murphy.

WELLS, FARGO & COMPANY'S BANK—SAN FRANCISCO.

[February 6th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Real estate by foreclosure ----	\$108,000 00	Capital paid in coin -----	\$500,000 00
Loans on real estate -----	74,203 57	Surplus fund -----	1,290,480 18
Invested in stocks and bonds ----	23,200 00	Due depositors -----	795,635 99
Loans on stocks and bonds ----	570,688 26	Due banks and bankers ----	2,987 35
Loans on personal security ----	819,759 30	Rents -----	900 16
Loans on other securities ----	25,361 29	Other liabilities -----	80,047 33
Money on hand -----	545,884 63		
Deposits in other banks ----	13,353 46		
Furniture, fixtures, and safes ----	3,379 25		
Due from Agencies -----	485,077 09		
Other assets -----	1,144 16		
Total assets -----	\$2,670,051 01	Total liabilities -----	\$2,670,051 01

Examined by all the Commissioners.

SOLANO COUNTY.

BANK OF DIXON—DIXON.

[April 8th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot -----	\$7,500 00	Capital paid in coin -----	\$156,170 00
Real estate by foreclosure ----	3,000 00	Surplus fund -----	12,677 93
Loans on real estate -----	134,723 23	Due depositors -----	93,851 82
Invested in county warrants ----	451 66	Due banks and bankers ----	1,903 13
Loans on personal security ----	70,098 36	Dividends unpaid -----	632 01
Loans on other securities ----	10,000 00		
Money on hand -----	4,311 00		
Deposits in other banks ----	1,623 58		
Furniture, fixtures, and safes ----	755 66		
Interest account -----	15,000 00		
Total assets -----	\$247,463 49	Total liabilities -----	\$265,234 89
		Less total assets -----	247,463 49
		Total amount written off ----	\$17,771 40
		Deduct "Surplus Fund" -----	12,677 93
		Impairment of capital ----	\$5,093 47

Examined by Commissioner Coleman.

BANK OF SUISUN—SUISUN CITY.

[March 19th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Real estate by foreclosure.....	\$417 68	Capital paid in coin.....	\$100,000 00
Loans on real estate.....	168,993 43	Surplus fund.....	18,203 11
Loans on personal security.....	42,426 37	Due depositors.....	199,045 89
Money on hand.....	37,634 15	Profit and loss.....	3,579 86
Deposits in other banks.....	46,131 04		
Furniture, fixtures, and safes.....	3,007 05		
Interest accrued.....	22,219 14		
Total assets.....	\$320,828 86	Total liabilities.....	\$320,828 86

Examined by Commissioner Coleman.

BANK OF VALLEJO—VALLEJO.

[March 13th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Loans on real estate.....	\$56,330 62	Capital paid in coin.....	\$61,000 00
Invested in stocks and bonds.....	200 00	Surplus fund.....	717 33
Loans on personal security.....	7,196 82	Due depositors.....	22,868 90
Loans on other securities.....	2,790 00		
Money on hand.....	9,959 17		
Deposits in other banks.....	2,189 37		
Furniture, fixtures, and safes.....	2,500 00		
Interest accrued.....	3,100 00		
Other assets.....	320 25		
Total assets.....	\$84,586 23	Total liabilities.....	\$84,586 23

Examined by Commissioner Coleman.

VALLEJO SAVINGS AND COMMERCIAL BANK—VALLEJO.

[March 12th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Real estate by foreclosure.....	\$43,100 00	Capital paid in coin.....	\$217,700 00
Loans on real estate.....	36,506 78	Surplus account.....	753 84
Invested in warrants.....	1,764 24	Due depositors.....	55,070 71
Loans on stocks and bonds.....	11,300 00		
Loans on other securities.....	15,477 50		
Money on hand.....	10,874 24		
Deposits in other banks.....	6,389 85		
Furniture, fixtures, and safe.....	2,739 65		
Unsecured loans, deemed good but not permitted by savings bank laws.....	13,985 07		
Total assets.....	\$142,137 33	Total liabilities.....	\$273,524 55
		Less total assets.....	142,137 33
		Deficit as regards stock- holders.....	\$131,387 22

Capital paid in as above.....	\$217,700 00
Surplus as above.....	753 84
Total.....	\$218,453 84
Less deficit as above.....	131,387 22
Surplus to secure depositors and balance as regards stockholders.....	\$87,066 62

Examined by Commissioner Coleman.

SONOMA COUNTY.

FARMERS' AND MECHANICS' BANK OF HEALDSBURG—
HEALDSBURG.

[April 25th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot, fix- tures, and safes.....	\$9,067 91	Capital paid in coin.....	\$73,820 00
Loans on real estate.....	64,967 68	Surplus fund.....	3,133 47
Loans on personal security.....	58,201 27	Due depositors.....	62,358 68
Loans on other securities.....	3,085 00	Due banks and bankers.....	6,927 65
Money on hand.....	10,917 94		
Total assets.....	\$146,239 80	Total liabilities.....	\$146,239 80

Examined by Commissioner Coleman.

BANK OF HEALDSBURG—HEALDSBURG.

[April 24th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Real estate by foreclosure.....	\$3,826 98	Capital paid in coin.....	\$100,000 00
Loans on real estate.....	52,642 73	Surplus fund.....	4,993 51
Invested in bank stock.....	5,000 00	Due depositors.....	51,949 46
Loans on stocks and bonds.....	595 79	Due banks and bankers.....	29,281 36
Loans on personal security.....	102,617 85	Dividends unpaid.....	2,168 75
Loans on other securities.....	2,933 90	Discounts.....	135 66
Money on hand.....	5,178 26		
Deposits in other banks.....	704 24		
Furniture, fixtures, and safes.....	3,480 25		
Interest accrued.....	10,724 55		
Expenses, taxes, etc.....	21 84		
Other assets.....	802 35		
Total assets.....	\$188,528 74	Total liabilities.....	\$188,528 74

Examined by Commissioner Coleman.

PETALUMA SAVINGS BANK—PETALUMA.

[March 31st, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot.....	\$7,307 00	Capital paid in coin.....	\$100,000 00
Loans on real estate.....	82,044 00	Surplus fund.....	24,195 00
Invested in bonds.....	9,000 00	Due depositors.....	130,205 73
Loans on personal security.....	120,304 05	Dividends unpaid.....	36 00
Loans on other securities.....	1,212 00		
Money on hand.....	15,400 35		
Deposits in other banks.....	16,365 33		
Furniture, fixtures, and safes.....	2,804 00		
Total assets.....	\$254,436 73	* Total liabilities.....	\$254,436 73

Examined by Commissioner Watt.

SANTA ROSA BANK—SANTA ROSA.

[April 22d, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot, safes, etc. -----	\$9,581 15	Capital paid in coin -----	\$300,000 00
Real estate by foreclosure ---	36,474 09	Surplus fund -----	31,863 56
Loans on real estate -----	215,696 83	Due depositors -----	203,771 90
Invested in county warrants ---	2,324 69	Due banks and bankers ---	10,058 32
Loans on stocks and bonds ---	9,576 08	Interest account -----	1,986 13
Loans on personal security ---	147,348 18	Dividends unpaid -----	615 00
Loans on other securities -----	29,545 54	Exchange -----	290 89
Money on hand -----	53,661 10		
Deposits in other banks -----	4,561 12		
Interest accrued -----	39,320 97		
Expenses, taxes, etc. -----	496 05		
Total assets -----	\$548,585 80	Total liabilities -----	\$548,585 80

Examined by Commissioners Coleman and Watt.

SAVINGS BANK OF SANTA ROSA—SANTA ROSA.

[April 23d, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot -----	\$10,629 25	Capital paid in coin -----	\$133,660 00
Real estate by foreclosure ---	11,010 64	Surplus fund -----	2,423 77
Loans on real estate -----	119,605 80	Due depositors -----	122,124 62
Invested in county warrants ---	1,127 97	Due banks and bankers ---	16,740 67
Loans on stocks and bonds ---	3,726 23	Interest account -----	384 28
Loans on personal security ---	63,002 01	Dividends unpaid -----	615 00
Loans on other securities -----	40,393 62		
Money on hand -----	19,070 88		
Deposits in other banks -----	27 51		
Furniture, fixtures, and safes ---	3,124 93		
Interest accrued -----	4,195 00		
Expenses, taxes, etc. -----	34 50		
Total assets -----	\$275,948 34	Total liabilities -----	\$275,948 34

Examined by Commissioners Coleman and Watt.

BANK OF SONOMA COUNTY—PETALUMA.

[March 31st, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot -----	\$19,000 00	Capital paid in coin -----	\$300,000 00
Real estate by foreclosure -----	7,367 70	Surplus fund -----	11,550 27
Loans on real estate -----	198,562 93	Due depositors -----	174,262 12
Loans on stocks and bonds -----	59,856 25	Due banks and bankers -----	32,929 73
Loans on personal security -----	208,530 11	Dividends unpaid -----	2,650 00
Money on hand -----	23,692 22		
Deposits in other banks -----	442 91		
Furniture, fixtures, and safes -----	3,940 00		
Total assets -----	\$521,392 12	Total liabilities -----	\$521,392 12

Examined by Commissioner Watt.

SONOMA VALLEY BANK—SONOMA.

[March 27th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Real estate by foreclosure -----	\$9,174 00	Capital paid in coin -----	\$53,100 00
Loans on real estate -----	31,976 50	Surplus fund -----	401 28
Loans on bank stock -----	1,500 00	Due depositors -----	27,635 39
Loans on personal security -----	24,725 33	Due banks and bankers -----	.397 79
Money on hand -----	5,262 03		
Deposits in other banks -----	4,269 62		
Furniture, fixtures, and safes -----	1,014 00		
Interest accrued -----	2,500 00		
Other assets -----	1,112 98		
Total assets -----	\$81,534 46	Total liabilities -----	\$81,534 46

NOTE.—Assets deemed good by the President of the bank, but not included by the Commissioner, as of very doubtful value, \$9,803 58.

Examined by Commissioner Coleman.

STANISLAUS COUNTY.

FARMERS' SAVINGS BANK OF STANISLAUS COUNTY—
MODESTO.

[April 10th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Real estate by foreclosure	\$2,375 94	Due depositors	\$3,036 00
Loans on real estate	21,650 13	Due Modesto Bank *	75,499 73
Loans on stocks	4,111 86		
Loans on personal security	19,973 64		
Loans on other securities	5,075 29		
Money on hand	2,304 65		
Interest accrued	4,647 89		
Total assets	\$60,139 40	Total liabilities	\$78,535 73
		Less total assets	60,139 40
		Deficit	\$18,396 33

* See examination of Modesto Bank.

.Examined by Commissioner Watt.

MODESTO BANK—MODESTO.

[April 10th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$4,633 28	Capital paid in coin	\$150,000 00
Real estate by foreclosure	14,884 61	Due depositors	157,162 91
Loans on real estate	50,234 99	Due banks and bankers	52,530 91
Invested in county warrants	1,722 78	Other liabilities	133 50
Loans on personal security	74,239 97		
Loans on other securities	110,508 43		
Money on hand	23,792 63		
Deposits in other banks	1,295 00		
Furniture, fixtures, and safes	2,507 14		
Due from Farmers' Savings Bank of Stanislaus County*	75,499 73		
Other assets	508 76		
Total assets, per bank's books	\$359,827 32	Total liabilities	\$359,827 32
Less deficit of Farmers' Savings Bank *	18,396 33	Less actual assets	341,430 99
Actual assets	\$341,430 99	Impairment of capital	\$18,396 33

* See examination of Farmers' Savings Bank of Stanislaus County.

Examined by Commissioner Watt.

TEHAMA COUNTY.

BANK OF TEHAMA COUNTY—RED BLUFF.

[November 23d, 1878.]

STATEMENT.

Assets.		Liabilities.	
Loans on real estate	\$60,197 08	Capital paid in coin	\$159,120 00
Invested in county warrants	12,008 27	Surplus fund	20,664 08
Loans on stocks and bonds	20,251 75	Due depositors	124,335 51
Loans on personal security	139,628 35	Interest account (balance)	12,251 63
Loans on other securities	31,779 34	Other liabilities	1,823 54
Money on hand	37,857 43		
Deposits in other banks	9,108 91		
Furniture, fixtures, and safes	4,800 00		
Expenses, taxes, etc.	2,563 63		
Total assets	\$318,194 76	Total liabilities	\$318,194 76

Examined by Commissioners Coleman and Watt.

TULARE COUNTY.

BANK OF VISALIA—VISALIA.

[March 12th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$10,707 87	Capital paid in coin	\$200,000 00
Loans on real estate	122,341 08	Surplus fund	13,330 82
Invested in county warrants	4,425 45	Due depositors	74,825 34
Loans on personal security	129,313 51	Due banks and bankers	14,433 47
Loans on other securities	5,268 10	Interest account	553 15
Money on hand	20,594 50		
Deposits in other banks	1,973 56		
Furniture, fixtures, and safes	4,464 79		
Expenses, taxes, etc.	4,053 92		
Total assets	\$303,142 78	Total liabilities	\$303,142 78

Examined by Commissioner Watt.

VENTURA COUNTY.

BANK OF VENTURA—SAN BUENAVENTURA.

[December 6th, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$4,177 65	Capital paid in coin	\$90,000 00
Real estate by foreclosure	17,363 65	Due depositors	41,042 36
Loans on real estate	23,916 05	Due banks and bankers	12,389 34
Invested in warrants	4,155 28	Interest due	504 80
Loans on other securities	78,366 34	Discount and exchange	19,881 63
Money on hand	12,570 93		
Deposits in other banks	5,812 43		
Furniture, fixtures, and safes	2,674 10		
Interest accrued	11,454 42		
Expenses since July 1st, 1878	2,136 05		
Other assets	1,189 23		
Total assets	\$163,818 13	Total liabilities	\$163,818 13

Examined by Commissioner Murphy.

YOLO COUNTY.

BANK OF WOODLAND—WOODLAND.

[April 9th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$14,789 66	Capital paid in coin	\$450,000 00
Real estate by foreclosure	9,098 34	Surplus fund	13,500 00
Loans on real estate	308,685 61	Due depositors	171,665 45
Invested in county warrants	4,030 15	Interest collected	20,623 68
Loans on personal security	190,783 64	Rents, exchange, etc.	1,580 15
Loans on other securities	8,274 55		
Money on hand	62,951 24		
Deposits in other banks	46,623 48		
Furniture, fixtures, and safes	948 00		
Expenses and taxes since June 1st, 1878	10,137 63		
Other assets	1,046 98		
Total assets	\$657,369 28	Total liabilities	\$657,369 28

Examined by Commissioner Coleman.

YUBA COUNTY.

FARMERS' BANK OF WHEATLAND—WHEATLAND.

[June 9th, 1879.]

STATEMENT.

Assets.		Liabilities.	
Real estate by foreclosure	\$3,874 80	Capital paid in coin	\$33,500 00
Loans on real estate	3,400 00	Due depositors	17,840 72
Loans on personal security	57,614 10	Due banks and bankers	22,600 24
Money on hand	2,735 93	Interest due	494 39
Furniture, fixtures, and safes	1,200 00		
Interest accrued	1,137 07		
Total assets	\$69,961 90	Total liabilities	\$74,435 35
		Total assets	69,961 90
		Impairment of capital	\$4,473 45

Examined by Commissioner Watt.

MARYSVILLE SAVINGS BANK—MARYSVILLE.

[November 22d, 1878.]

STATEMENT.

Assets.		Liabilities.	
Banking house and lot	\$3,027 95	Reserve fund	\$10,938 90
Real estate by foreclosure	55,868 34	Due depositors	1,000,859 32
Loans on real estate	927,851 30	Interest account (balance)	14,290 54
Loans on stocks and bonds	3,560 00		
Loans on other securities	18,948 25		
Money on hand	3,930 64		
Deposits in other banks	4,787 45		
Furniture, fixtures, and safes	2,141 89		
Expenses, taxes, etc.	5,972 94		
Total assets	\$1,026,088 76	Total liabilities	\$1,026,088 76

Examined by Commissioners Coleman and Watt.

CONDENSED STATEMENTS.

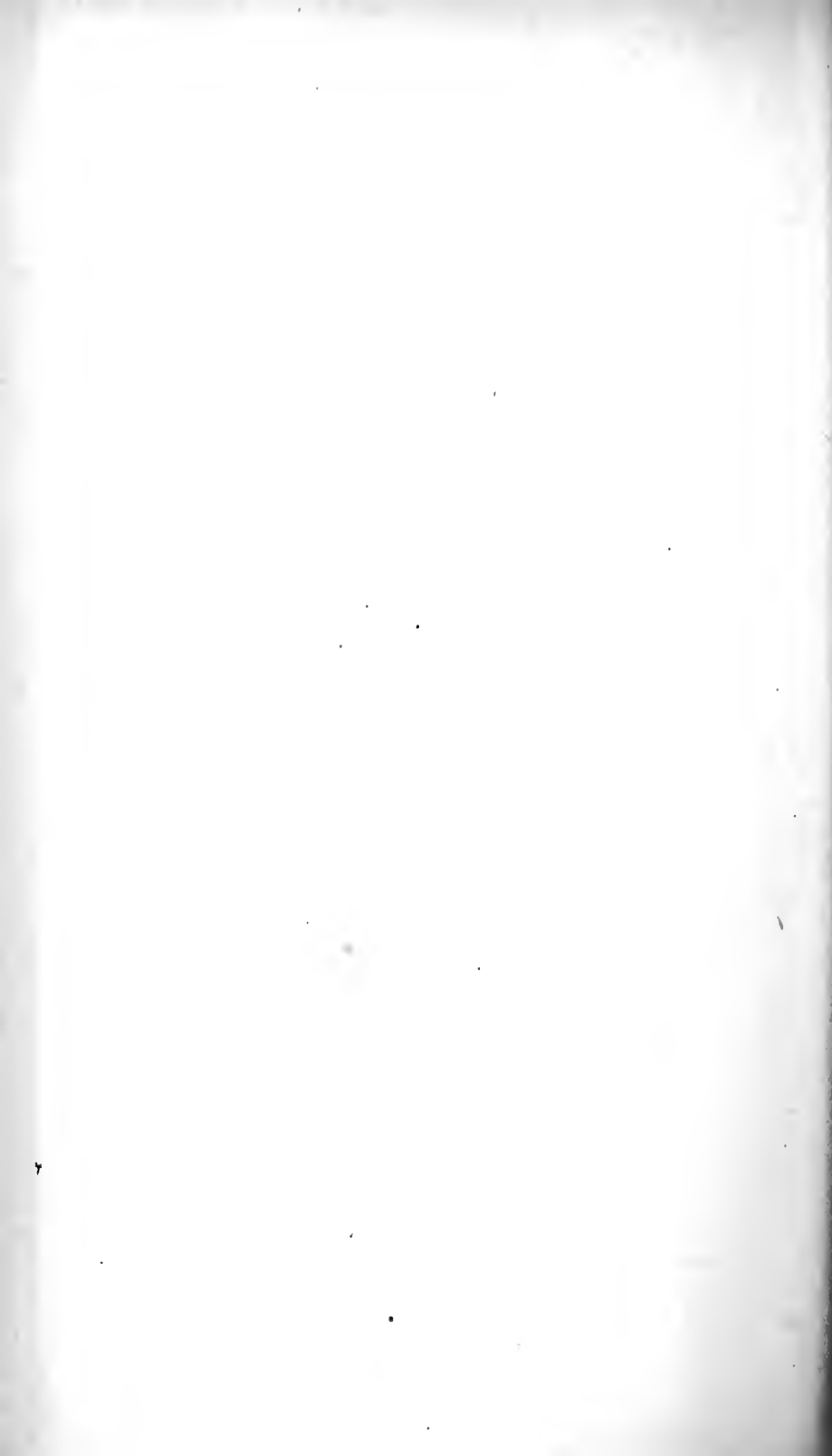


TABLE No. 7.

Relative to the Savings Banks of this State—Compiled from their Statements on the 1st of January, 1879.

Name of Savings Bank—Arranged Alphabetically.	Location.	Amount of Capital Stock Subscribed.	Amount of Capital Stock Paid Up.	Reserve Fund.	Total of Capital and Reserves.	Amount in Excess than Capital or Reserves.	Surplus Capital and Reserves in Excess (Per Cent).	Kind of Shares Issued.	No. of Shares Issued.	No. of Shares Held by Directors.	Amount Paid Up per Share.
1. California Savings and Loan Society	San Francisco	\$500,000.00	\$527,000.00	\$3,677.00	\$530,777.00	\$2,669.00	241.3	300	80	80	\$1.00
2. Capital Savings Bank	San Francisco	500,000.00	330,000.00	8,334.79	338,334.79	1,665.21	16.65	1,000	1,000	0	\$1.00
3. Commercial and Savings Bank of San Jose	San Jose	500,000.00	500,000.00	11,551.00	1,011,551.00	1,000.00	100.00	1,000	1,000	0	\$1.00
4. Farmers' Savings Bank of Stockton City	Stockton	500,000.00	315,810.00	6,184.28	321,994.28	10,005.72	40.02	2,000	1,470	40	\$1.00
5. First National Savings Bank	San Francisco	500,000.00	375,000.00	10,750.00	385,750.00	14,250.00	14.25	2,000	1,000	0	\$1.00
6. German Savings and Loan Society	San Francisco	400,000.00	370,000.00	77,000.00	447,000.00	17,700.00	44.25	2,000	1,000	0	\$1.00
7. Illinois Savings and Loan Society	San Francisco	None.	None.	1,000.00	1,000.00	8,333.34	83.33	None.	None.	None.	None.
8. Merchants' Savings and Loan Society	San Francisco	100,000.00	107,000.00	17,652.00	124,652.00	17,652.00	176.52	None.	None.	None.	None.
9. Los Angeles Unity Bank	Los Angeles	250,000.00	86,000.00	9,948.77	95,948.77	159,051.23	159.05	5,000	5,000	0	\$1.00
10. National City Bank	San Francisco	1,000,000.00	1,000,000.00	14,652.44	2,014,652.44	1,000.00	100.00	1,000	1,000	0	\$1.00
11. Mechanics' Bank of	Stockton	None.	None.	2,000.00	2,000.00	13,333.33	133.33	None.	None.	None.	None.
12. Nevada Savings Bank	Stockton	None.	None.	2,000.00	2,000.00	13,333.33	133.33	None.	None.	None.	None.
13. New York Savings and Loan Society	New York	100,000.00	None.	4,000.00	104,000.00	11,111.11	111.11	1,000	1,000	0	\$1.00
14. Oakland Bank of Savings	Oakland	None.	437,000.00	42,007.14	479,007.14	38,992.86	389.93	1,000	1,000	0	\$1.00
15. Citizens' Bank	San Francisco	500,000.00	315,000.00	6,000.00	321,000.00	18,000.00	18.00	2,000	1,000	0	\$1.00
16. Burns Bros Bank of Savings and Loan	San Francisco	21,000.00	20,000.00	None.	21,000.00	1,000.00	4.76	1,000	1,000	0	\$1.00
17. Security Savings Bank Union	San Francisco	500,000.00	315,000.00	6,000.00	321,000.00	18,000.00	18.00	2,000	1,000	0	\$1.00
18. San Jose Savings Bank	San Jose	500,000.00	315,000.00	6,000.00	321,000.00	18,000.00	18.00	2,000	1,000	0	\$1.00
19. Security Savings Bank	San Francisco	500,000.00	315,000.00	6,000.00	321,000.00	18,000.00	18.00	2,000	1,000	0	\$1.00
20. Savings and Loan Society	San Francisco	500,000.00	315,000.00	6,000.00	321,000.00	18,000.00	18.00	2,000	1,000	0	\$1.00
21. Stockton Savings and Loan Society	Stockton	500,000.00	315,000.00	6,000.00	321,000.00	18,000.00	18.00	2,000	1,000	0	\$1.00
22. Union Savings Bank	Stockton	500,000.00	315,000.00	6,000.00	321,000.00	18,000.00	18.00	2,000	1,000	0	\$1.00
23. Valley Savings and Commercial Bank	Yuba	617,000.00	511,000.00	21,000.00	1,109,000.00	66,000.00	66.00	2,000	2,000	0	\$1.00
Total.		\$4,312,000.00	\$4,660,750.00	\$75,225.74	\$4,735,975.74	\$32,625.74	121.51	13,300	57,876	25-45	

* Capital invested	† Average per cent.	‡ Shares subscribed for.
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* Capital invested	† Average per cent.	‡ Shares subscribed for.
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TABLE No. 8

Relative to the Commercial Banks of this State—Compiled from their Statements on the 1st of January, 1879.

Name of Bank—ARRANGED ALPHABETICALLY.	Location.	Amount of Cap- ital Paid Subscribed.	Amount of Cap- ital Paid Out.	Surplus Fund.	Total Capital Paid up and Surplus.	Loans on Basis of Bridges.	Ratio of Capital and Surplus to Loans, (Per Cent.)	Total Number of Shares Is- sued.	Total Number of Shares Held by Depositors.	Amount Paid per Share.
1. American Bank of	Anaheim	\$90,000 00	\$89,000 00	\$5,100 00	\$133,700 00	\$10,000 00	85 87	700	700	\$22 40
2. Bollen Bank of	Bolton	50,000 00	50,000 00	1,000 00	51,000 00	3,000 00	70 50	1,000	1,000	11 50
3. Santa Anita Bank of	Chico	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
4. California Bank of	San Francisco	1,000,000 00	1,000,000 00	100,000 00	1,100,000 00	100,000 00	10 00	1,000	1,000	11 50
5. Chiles Bank of	Chico	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
6. National Bank of	Chico	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
7. Odom County Bank	Chico	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
8. Commercial Bank of San Diego	San Diego	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
9. Commercial Bank of Los Angeles	Los Angeles	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
10. Darn Bank of	Darn	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
11. Farmers Bank of Washington	Washington	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
12. Farmers Savings Bank	Lakewood	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
13. Farmers and Merchants Bank	Los Angeles	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
14. Farmers and Merchants Bank	Los Angeles	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
15. Farmers Bank	Los Angeles	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
16. Gilroy Bank of	Gilroy	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
17. Hamilton Bank of	Hamilton	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
18. Hamilton Bank of	Hamilton	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
19. Hamilton Bank of	Hamilton	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
20. Hamilton Bank of	Hamilton	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
21. Hamilton Bank of	Hamilton	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
22. Hamilton Bank of	Hamilton	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
23. Hamilton Bank of	Hamilton	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
24. Hamilton Bank of	Hamilton	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
25. Hamilton Bank of	Hamilton	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
26. Hamilton Bank of	Hamilton	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
27. Hamilton Bank of	Hamilton	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
28. Hamilton Bank of	Hamilton	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000	1,000	11 50
29. Hamilton Bank of	Hamilton	100,000 00	100,000 00	10,000 00	110,000 00	10,000 00	11 00	1,000		

* Capital repaired. (See Concomitant Exemptions.) † Average per cent.

* Capital repaired. (See Concomitant Exemptions.) † Average per cent.



Containing Abstracts of the Statements of the Savings Banks of California, on the morning of January 1st, 1879.

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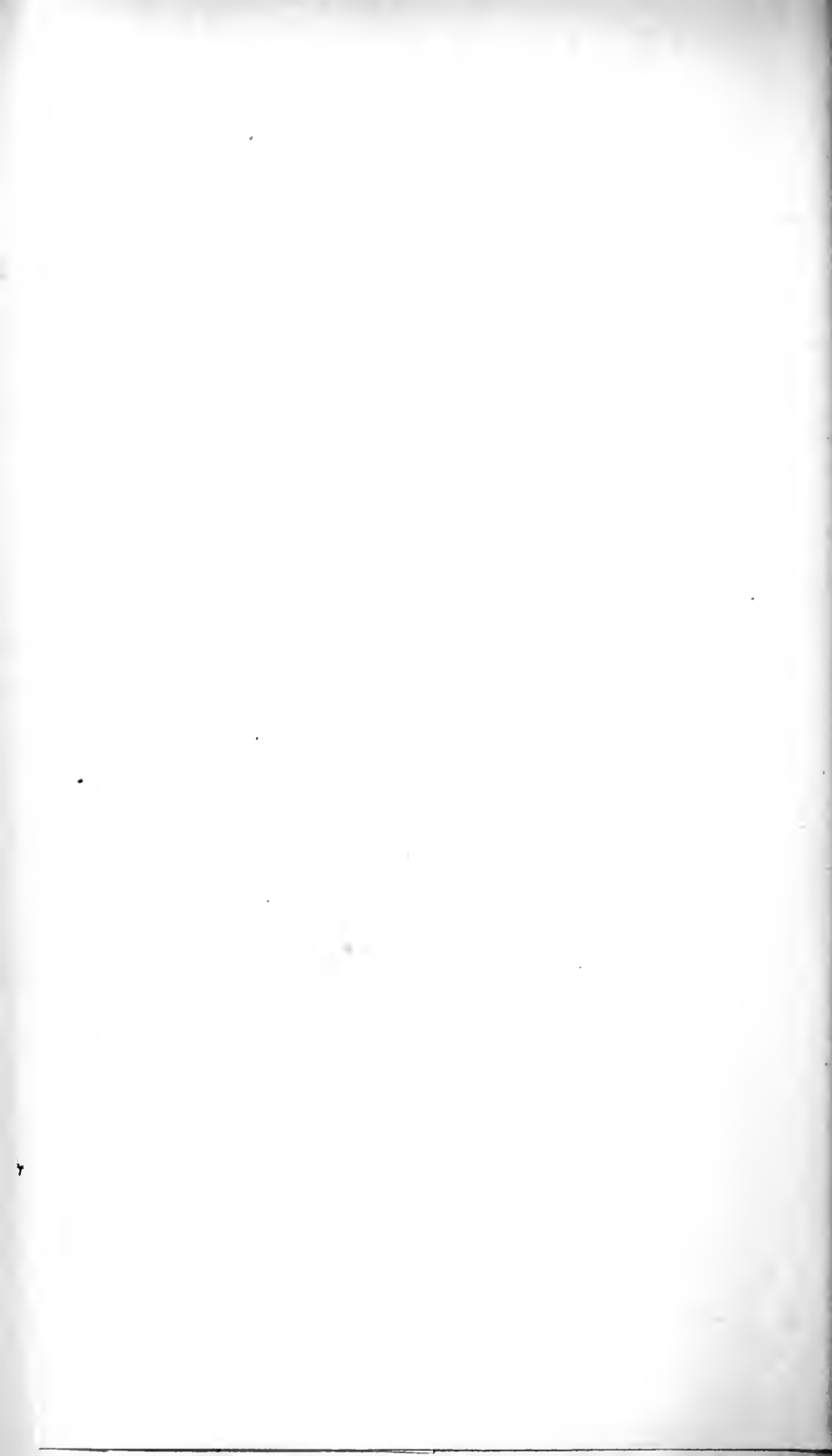
* Capital Impaired. (See Organizations' Examinations.)

TABLE No. 10.

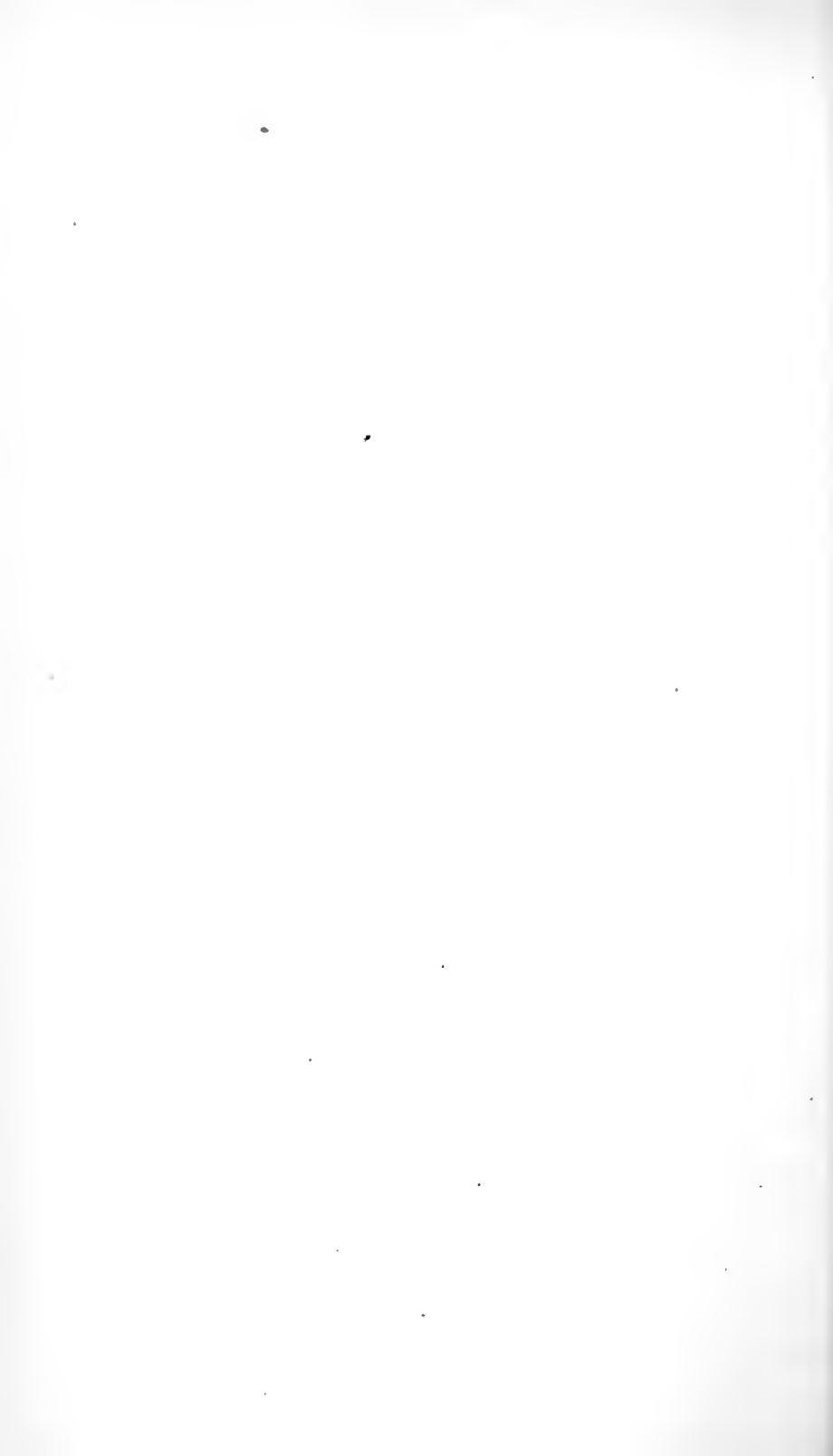
Containing Abstracts of the Statements of the Commercial Banks of California, on the morning of January 1st, 1879.

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*Capital required. (See Computations: Ex-ante) (p. 5.)



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FIFTH BIENNIAL REPORT
OF THE
STATE BOARD OF HEALTH
OF
CALIFORNIA,
FOR THE YEARS 1878 AND 1879.



SACRAMENTO:
STATE OFFICE : : : F. P. THOMPSON, SUPT. STATE PRINTING.
1879.



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REPORT

OF THE

STATE BOARD OF HEALTH.

MEMBERS OF THE STATE BOARD OF HEALTH.

HENRY GIBBONS, SR., M. D., President.....	San Francisco.
F. WALTON TODD, M. D.	Stockton.
A. B. STOUT, M. D.	San Francisco.
LUKE ROBINSON, M. D.	Colusa.
J. S. CAMERON, M. D.	Red Bluff.
J. F. MONTGOMERY, M. D.	Sacramento.
F. W. HATCH, SR., M. D.	Sacramento.

COMMITTEES OF THE STATE BOARD OF HEALTH.

On the Salubrity of Public Institutions, Schools, Hospitals, Prisons, Factories, etc.—Drs. A. B. STOUT, J. F. MONTGOMERY, and F. WALTON TODD.

On Statistics Relating to Life and Health, Modes of Employment and of Living, and the Comparative Healthfulness of Different Localities.—Drs. F. WALTON TODD, J. S. CAMERON, H. GIBBONS, Sr., and LUKE ROBINSON.

On Intoxicating Liquors, Inebriate Asylums, Pathological Influence of Alcohol, etc.—Drs. H. GIBBONS, Sr., J. S. CAMERON, and J. F. MONTGOMERY.

Of these committees the Secretary of the Board is *ex officio* a member.

REPORT.

To His Excellency, William Irwin, Governor of California:

The State Board of Health respectfully present herewith their fifth biennial report.

The sanitary condition of the State during the past two years, and the efforts of the Board to ameliorate the same, have been detailed in the report of the Permanent Secretary.

By a system of reports from voluntary correspondents we have been kept informed of the healthfulness, as well as of the rise and progress of disease in different localities throughout the State, and we have endeavored, by bi-monthly bulletins, to convey this information to others.

Investigations have been commenced into the sewerage and water supply of the cities and towns of California, and the results, as far as the work has progressed, are given in the present report, together with a few reflections which seemed pertinent to these subjects.

The prescribed limits of this report forbid a more extended allusion to these important questions at this time. They might be profitably continued in the next biennial report, when additional analyses, especially of the well water supplied to many of the towns of the State, might be given. The sentiment is becoming more and more deeply impressed upon sanitarians that there exists an intimate relation between the drinking water of a community and certain serious and quite prevalent diseases, and the correctness of this opinion has been demonstrated by many facts both in this country and in Europe; hence the importance of a thorough investigation of the subject.

The attention of your Excellency is called to the several papers accompanying the report of the Permanent Secretary, prepared by different members of the Board of Health. They treat of subjects important in a hygienic point of view, and instructive to the people in matters involving the sanitary welfare of the State. The consideration of these and kindred subjects of public interest is one of the duties of the State Board of Health, and it is by the dissemination of such information that its highest mission is to be fulfilled.

It is not too much to believe that some public benefit has already been accomplished by the publications of this Board. For their full fruition we must look to the future. The good effects of sanitary work must, of necessity, be of slow growth. The public mind has to be educated upon this subject. Sanitary science cannot at once accomplish what she seeks to do. Prohibitory laws—coercive measures—can never be effectually enforced unless sustained by an enlightened public sentiment. To encourage and promote such a sentiment is one of the chief aims of the science. It is its first step towards complete success. This it seeks to do by the gradual process

of education, by disseminating truth, by calling attention to error, by scattering abroad over the land the results of observation or the deductions of reason, by sowing seeds which, though they may, to all appearances, lie dormant for a time, will ultimately germinate and bear abundant harvests. Hence Boards of Health are not to be condemned or thought of doubtful utility because immediate results do not follow; but it can no more happen that the knowledge spread abroad among the people by their instrumentality should prove altogether barren, than that the grain of wheat planted in its season should fail to spring into life and bear fruit.

STATEMENT

Of the condition of the appropriations for mileage and contingent expenses of the State Board of Health for 29th and 30th fiscal years.

TWENTY-NINTH FISCAL YEAR, ENDING JUNE 30TH, 1878.

Appropriation	\$1,500 00
Expended, as per vouchers in Controller's office	867 00
Balance unexpended	\$633 00

THIRTIETH FISCAL YEAR, ENDING JUNE 30TH, 1879.

Appropriation	\$1,000 00
Expended, as per vouchers in Controller's office	605 90
Balance unexpended	\$394 10

Leaving an unexpended balance in the appropriation for the 29th and 30th fiscal years of \$1,027 10.

REPORT OF THE PERMANENT SECRETARY

TO THE

STATE BOARD OF HEALTH.

REPORT OF PERMANENT SECRETARY.

To the State Board of Health :

GENTLEMEN: It becomes the duty of your Secretary again to present for your consideration his biennial report.

A review of the past two years affords the gratifying evidence of an improved sanitary condition of the State, and this is especially observable in the mortality by zymotic diseases and among the infantile population.

One of the most favorable results of the work of this Board has been a gradually increasing interest in the subject of the public health, manifested by the establishment of local health boards in different parts of the State. The Act of the last Legislature requiring the organization of these boards has met with a very general approval, and already has resulted in the formation of auxiliary boards in fifteen towns and cities, viz.: Chico, San Luis Obispo, San Diego, Hayward, Vallejo, Sonora, Visalia, Santa Rosa, Petaluma, Santa Barbara, Red Bluff, Colusa, San Buenaventura, Los Angeles, and Tulare County. In addition to these, we have the previous boards of San Francisco, Sacramento, Oakland, and Stockton, making nineteen in all. Of these, eleven have placed themselves in communication with the State Board.

It is believed that it would materially add to the regularity of the reports from the local Boards of Health, if blanks for returns of deaths and births were forwarded by the State Board for distribution among physicians of each town where local organizations have been formed, except in the large cities, where these returns are regulated by municipal law. To enlist the coöperation of medical men engaged in active professional duties in such reports, the labor to be performed must be reduced to a minimum. Even the work of writing out a certificate of a birth or death is of some moment to the busy practitioner. Simply filling up a printed blank materially lessens the burden. An effort will be made to accomplish this during the present year.

Your Secretary takes pleasure in congratulating you upon the final success of the efforts so urgently made by the American Medical Association and others for the creation, by Congress, of a National Board of Health—a success due in very great degree to the terrible epidemic of yellow fever which devastated so large an extent of the southern and southwestern portion of the United States. The necessity of such a Board was thus forcibly demonstrated, and commanded the assent of an hitherto lukewarm or unwilling National Legislature. Communication has already been partially established between this State Board and the national organization at Washington, and an effort will be made to obtain, from at least a portion of our cities and towns, weekly reports of deaths and diseases, thereby enabling

us more fully to coöperate with them in the preparation and issuance of a bulletin of prevalent diseases in all parts of the United States. The importance of the object is worthy an effort for accomplishment.

In pursuance of its duty to instruct the people in matters pertaining to their sanitary welfare, the State Board of Health have issued circulars upon public hygiene, which have been generally circulated directly from this office and through the press. One of these, October, 1877, related to the precautions deemed necessary to be observed in view of the extensive prevalence of diphtheria at that time. The other was designed to allay the apprehensions just then arising in the public mind, especially in the central valleys along the line of railroad communication with the States east of us, of the appearance of yellow fever in this State. These apprehensions were suddenly increased by the reported outbreak of the disease on a car at or near Reno, in the State of Nevada, in a family of emigrants from Memphis, Tennessee. Whatever foundation there may have been for the suspicion of the disease having been yellow fever, strict precaution was taken by the Central Pacific Railroad Company, the car detached from the train, and after the death of the sick person the passengers transferred to another car and permitted to pursue their journey westward. The low temperature prevailing at Reno during the delay there was certainly not favorable, according to the usual history of yellow fever, to the vitality of the germ. Upon the arrival of the suspicious car near Sacramento it was quarantined, and the passengers submitted to a strict examination. Although one or two of the remaining members of the emigrant family were slightly sick upon their arrival here, there seemed to be no reason for their detention.

In addition to these circulars of the State Board, bi-monthly bulletins have been issued containing abstracts of the reports of deaths and "prevalent diseases" in a number of towns and cities of the State. These have been distributed to the local health boards and to the correspondents of the Board, as well as to various Boards of Health in other States.

The attention of the State Board of Health is called to the subject of the law concerning the registration of deaths, births, and marriages. The difficulties encountered in other States have been repeated in this; and though the result since the passage of this amended law at the last session of the Legislature has been an improvement upon that obtained under the former Act, it will scarcely warrant the attempt to classify the statistics received in the hope of drawing any useful inferences therefrom. Blanks were sent to the Recorder of each county, both for his own report and for the returns of physicians to him. It is but just to several of these officers to state that they have discharged their duties faithfully, both in the distribution of the blanks sent and in making their returns to this office, but the facts contained are so few as to deprive many of them of any great practical value. The complaint has been that the physicians failed to forward their reports to the Recorder's office.

It is suggested that a meeting of the Board of Health be set apart for the consideration of this subject, in the hope of devising some plan more acceptable to the physicians of the State.

MORTALITY AND VITAL STATISTICS.

The statistics of the past two years compare favorably with those of previous years, notwithstanding the greater number of localities reporting and the natural increase of population. It is a subject for congratulation that, with the exception of a few months at the close of 1878 and in the beginning of 1879, no extraordinary causes of disease have extensively prevailed, no prolonged heated term, no widespread epidemics. For the purpose of showing the mortality and its causes, a tabular statement has been made of all the reports received at the office of the Board. Although the period embraced is, for some localities, only a fraction of a year, the returns have been included in the "table," thereby extending the area under review and exhibiting to the fullest possible extent the mortality actually occurring.

It is to be regretted, so long as the law requiring the registration of deaths is unenforced, that a greater regularity has not been observed in the reports of correspondents. Yet there is a manifest improvement in this respect. The reports for 1878 have been more regular than those for 1877; and, as the local Health Boards become more generally and more perfectly organized, it is believed a still greater accuracy and regularity will be gradually attained.

As the value of these reports and the statistics they embrace must depend mainly upon the correctness with which they have been made, it is proper here to state that we have associated with us in this work a list of medical gentlemen upon whose judgment, it is believed, we may confidently rely, and to whom, as volunteers in the cause, the thanks of the State Board of Health are fitly due. Some of them have been engaged in making reports ever since the organization of the Board in 1870; others have more recently joined them, and of the very large majority it may be said that a real interest is manifested that accuracy and punctuality may be secured.

MORTALITY TABLE.

Arranged for Sexes, Ages, Nativities, and Diseases, with the Proportion of Deaths to Population in 1877.

TOWNSHIP.	Total.	DEATHS.		ACCS.		FAMILIES.		POPULATION.		SYMPTOMS OR EPIDEMICS.		FEVER.		LOCAL DISEASES.		DEVELOPMENTAL DISEASES.		EXTERNAL DISEASES.		Totals.
		Deaths.	Males.	Deaths.	Males.	Deaths.	Males.	Deaths.	Males.	Deaths.	Males.	Deaths.	Males.	Deaths.	Males.	Deaths.	Males.	Deaths.	Males.	
San Francisco.	5,607	3,391	1,115	1	1,019	419	131	101	500	546	412	331	12	183	307,000	10	100	25	1,010	30
Sacramento.	450	277	145	1	170	34	30	1	10	10	12	12	1	14	100,000	1	1	1	1	1
San Jose.	111	43	23	1	24	17	9	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Petaluma.	23	43	23	1	24	17	9	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Desert and vicinity.	11	43	23	1	24	17	9	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Mariposa.	41	35	15	1	14	13	13	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Placerville.	41	35	15	1	14	13	13	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Los Angeles.	17	147	148	1	125	101	101	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Tracy.	17	147	148	1	125	101	101	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Saint Helena and vicinity.	17	147	148	1	125	101	101	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Yuba.	17	147	148	1	125	101	101	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Blount and vicinity.	17	147	148	1	125	101	101	1	1	1	1	1	1	1	10,000	1	1	1	1	1
San Jose.	17	147	148	1	125	101	101	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Watsonville.	17	147	148	1	125	101	101	1	1	1	1	1	1	1	10,000	1	1	1	1	1
San Jose.	17	147	148	1	125	101	101	1	1	1	1	1	1	1	10,000	1	1	1	1	1
El Centro.	17	147	148	1	125	101	101	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Yuba and vicinity.	17	147	148	1	125	101	101	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Yuba.	17	147	148	1	125	101	101	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Yuba.	17	147	148	1	125	101	101	1	1	1	1	1	1	1	10,000	1	1	1	1	1
San Bernardino.	101	84	47	37	9	14	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Yuba and vicinity, Yuba County.	16	10	7	1	1	1	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Yuba, Shasta County.	16	10	7	1	1	1	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Downsville and vicinity.	16	10	7	1	1	1	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Antelope and vicinity.	16	10	7	1	1	1	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Yuba and vicinity.	16	10	7	1	1	1	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Woodland.	16	10	7	1	1	1	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Yuba and vicinity, Yuba County.	16	10	7	1	1	1	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Hollister and vicinity.	16	10	7	1	1	1	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1
San Jose.	16	10	7	1	1	1	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Red Bluff.	16	10	7	1	1	1	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Lakewood.	16	10	7	1	1	1	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Shasta.	16	10	7	1	1	1	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Yuba County.	16	10	7	1	1	1	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Princeton and vicinity.	16	10	7	1	1	1	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1
San Mateo County.	16	10	7	1	1	1	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Downsville and vicinity.	16	10	7	1	1	1	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Yuba.	16	10	7	1	1	1	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Yuba.	16	10	7	1	1	1	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1
Yuba, Yuba County.	16	10	7	1	1	1	1	1	1	1	1	1	1	1	10,000	1	1	1	1	1

* Unknown, † Malarial.

REPORT OF DEATHS

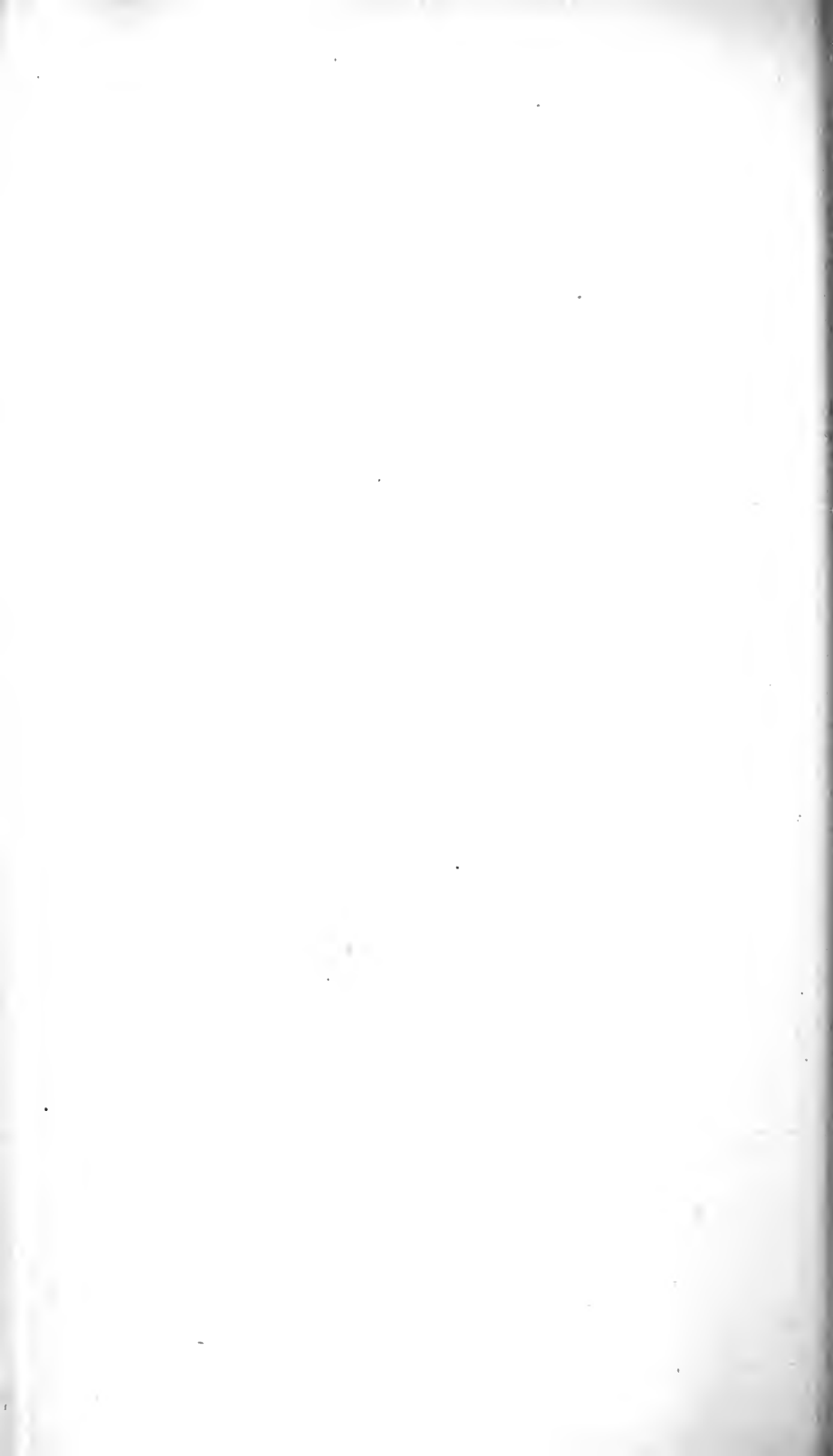
For the Year ending December 31st, 1877, arranged to show the Number Dying by Each Disease, with their Sexes, Ages, and Nativities.

CAUSES OF DEATH.	SEXES.		AGES.									NATIVITIES.				
	Male	Female	Unascertained	Under five years	Five and under ten years	Ten and under twenty years	Twenty and under thirty years	Thirty and under forty years	Forty and under fifty years	Fifty and under sixty years	Sixty and under one hundred years	Unascertained	Pacific States	Atlantic States	Foreign countries	Unascertained
<i>I.—Zymotic or Epidemic.</i>																
Cholera	16	12		5		1	2	2	3	3	1		5	3	8	
Cholera morbus	132	91	1	139	1	1	1	1				1	136	5	1	
Cholera infantum	39	23		30									30	3	4	
Diarrhoea	33	15	2	29							2		21	5	1	
Dysentery	238	149		68	41	28	50	32	12	5			132	31	71	
Small-pox	29	12	1	12	4	3							15	4		
Measles	56	36		36	9	5	1	1	1				11	3	8	4
Scarlatina	1,163	543	35	678	375	50	17	2	1	2	1	3	987	162	39	35
Diphtheria	121	57	6	95	22	1							163	11	4	3
Croup	39	21	1	38									37		1	
Whooping-cough	25	14	1	8	1	1	2	1	3	6		1	10	4	10	1
Erysipelas																
Fever—Typhus																
Typhoid	292	168	9	30	27	49	94	33	25	7	12	15	95	63	123	11
Remittent and intermittent	46	29	2	17	4	1	7	7	1	5	1		20	9	13	1
Cerebro-spinal	45	28	1	29	6	3	3	1	2	1			35	6	4	
Alcoholism (direct or remote)	63	49	1				1	17	21	14	3	1	2	20	31	7
<i>II.—Constitutional Diseases.</i>																
Tuberculosis, including phthisis pulmonary	911	545	5	26	8	63	263	222	178	93	50	8	115	294	186	16
Carried forward	3,289	1,828	66	1,251	499	208	446	322	762	137	72	72	1,864	566	810	89

MORTALITY TABLE.

Arranged for Sexes, Ages, Nativities, Diseases, and Months, with the Proportion of Deaths to Population—in 1878.

[illegible]



REPORT OF DEATHS

For the Year ending December 31st, 1878, arranged to show the Number Dying by Each Disease, with their Sexes, Ages, and Nativities.

CAUSES OF DEATH.	SEXES.			AGES.									NATIVITIES.			
Total	Male	Female	Unascertained	Under five years.	Five and under ten years.	Ten and under twenty years.	Twenty and under thirty years.	Thirty and under forty years.	Forty and under fifty years.	Fifty and under sixty years.	Sixty and under one hundred years.	Unascertained	Pacific States.	Atlantic States.	Foreign countries.	Unascertained
<i>I.—Zymotic or Epidemic.</i>																
Cholera	7	3		1	3	2	1	1	2				2		4	1
Cholera morbus	177	74	5	172	3	1						1	173			4
Cholera infantum	29	25		29	1			3	4	6	2		30	7	11	4
Diarrhea	39	21	18	19	1	2	4	1	3	5	1		19	6	9	5
Dysentery	1	1		1									1			
Small-pox	63	29		58	2	1	2						58	1	2	
Measles	38	14	24	25	11	1	1						37	3	1	
Scarlatina	363	168	96	187	127	22					1	26	272	38	10	38
Diphtheria	43	23	26	56	12				1			1	42	4	3	
Croup	39	24	34	57	1								55	3		1
Whooping-cough	9	8	1	57			4	1	2	1	1		55	2	7	
Erysipelas	3	1				2							3			
Fever—Typhus	3	2		1												
Typhoid	295	85	1	34	20	36	42	35	15	16	4		79	50	70	6
Remittent and intermittent	53	27	26	12	4	1	8	11	9	5	1	1	19	8	25	1
Cerebro-spinal	43	21	1	27	3	4	2	1	3			1	34	5	2	2
Alcoholism (direct or remote)	54	39	13	1			1	14	18	10	7	3	1	11	38	4
<i>II.—Constitutional Diseases.</i>																
Tuberculosis, including phthisis pulmonary	1,030	641	372	33	12	74	236	275	216	119	43	22	144	277	562	47
Carried forward	2,261	1,281	930	713	197	158	301	342	273	162	66	59	993	415	744	109

The mortality table for 1877 shows a total of 7,507 deaths, of which 1,449 were by the zymotic class, while the total for 1878 is 6,651, and the deaths by zymotic diseases 1,231. In the former year 2,621 children died under five years of age, or 34 per cent. of the mortality; in the latter, 2,046 died before they reached their fifth year, or 30 per cent. The zymotic diseases alone included 1,225 children under five years of age in 1877, while in 1878, of the victims of the same class, 680 were under five years of age.

This is the result obtained from the reports from all parts of the State. If we regard only those from the larger cities we find in 1877 that San Francisco, with its probable population at that time of 275,000 souls, furnished 2,019 deaths under five years of age, or .07 per cent.; Sacramento, with 24,000 population, 139, or .057 per cent.; Stockton, with 13,000, 36, or .027 per cent.; Los Angeles, with 14,000, 121, or .086 per cent.; Santa Barbara, with 5,500, 36, or .06 per cent.; Santa Cruz, with 5,000 population, 18, or .03 per cent.; and Marysville, with 7,000 population, 23, or .03 per cent.

For 1878 a similar statement, based upon the reported population of these same cities, gives .053 per cent. for San Francisco, estimating the population at 300,000; .043 per cent. for Sacramento; .011 per cent. for Stockton; .028 per cent. for Los Angeles; .06 per cent. for Santa Barbara; .023 per cent. for Santa Cruz; and .037 per cent. for Marysville; showing a difference in the total percentages in favor of the latter year of nearly .11 per cent. This is particularly gratifying, as the deaths in infancy may generally be considered indicative of the prevalence of zymotic diseases and the presence of their exciting causes. Thus, while CHOLERA INFANTUM numbered 237 victims in 1876, according to the last biennial report, the mortality by this cause in 1877 was only 162, and 177 in 1878. Of the latter, 143 were in the three Cities of San Francisco, Sacramento, and Los Angeles. SCARLATINA has passed lightly over our youthful population, being the reported cause of only 56 deaths in 1877, and 38 in 1878; while MEASLES yields a total of 20 and 63 respectively.

INFLAMMATORY DISEASES OF THE PULMONARY ORGANS—EIGHTEEN HUNDRED AND SEVENTY-SEVEN.

Of the pulmonary diseases PNEUMONIA stands prominent as a cause of mortality—369—while bronchitis is accountable for only 67. Distributing the cases of both these diseases, according to their localities, we find 349 to have occurred in the coast division, San Francisco alone being responsible for 337; 15 in the coast valleys; 61 in the interior valleys, and 11 in the mountains.

EIGHTEEN HUNDRED AND SEVENTY-EIGHT.

At no period since the organization of the State, so far as its medical history is known, have affections of the organs of respiration been quite as prevalent as during the latter part of 1878. Commencing in or about November, in a few localities, as a simple influenza or bronchitis, the area within which its influence was felt gradually widened until nearly all parts of the State, from which reports have been received, were very sensibly affected. Nor has it been confined to this simple form of disease; the epidemic influence seemed to gain vigor as it progressed and persisted; the vital resist-

ance of the people became perceptibly diminished, and it manifested itself by an increased severity in the type of the disease, by pneumonia in children and debilitated subjects, and especially in those advanced in life. Among the latter it assumed a decidedly asthenic form, and was sometimes rapidly fatal.

There seems, indeed, to have been at the time a marked tendency to the disease under consideration throughout many portions of the United States, and even in the Old World—one of those cycles of which the history of disease affords many examples, and which possess a deep interest not only in themselves but because they are sometimes the precursors of other and more serious epidemic influences. It would be unprofitable, without more extended research than the limits of this report would permit, to theorize upon the causes to which the recent prevalence of these diseases in California is to be attributed. The prominent meteorological conditions observed were an unusual predominance of northwest winds, a highly electrical condition of the atmosphere, and a continuously lower temperature than had ever, or almost ever, been experienced here. During October, November, and December, 1878, and January and February, 1879, the prevailing wind at Sacramento was northerly during 112 days, or an average of 22.5 days monthly, against 19 days for the same months during the preceding year, and about 18 days in 1876. The mean temperature of December, 1878, and January, 1879, calculated from the maxima and minima, was 44.6° and 45.6° respectively, against 47.9° for December, 1877 (record for January, 1878, lost), and 48° in December, 1876, and 50.3° in January, 1877. In December, 1878, there were 19 days with a minimum temperature below 32° , and 13 days in January, 1879. In the former month the minimum temperature fell on one day to 20° , and was 25° or less for eight days. The eucalyptus trees, some young orange and lemon trees, and several other varieties, which commonly bear well our winter temperature, suffered severely—some have perished irrecoverably. The same phenomena were witnessed as far south as Los Angeles.

Arranging the diseases under consideration according to their localities, we observe 404 on or near the coast, including San Francisco, 34 in the coast valleys, 90 in the interior valleys, and 5 in the mountains. Comparing the mortality by months for the twelve months ending April, 1879, with the previous twelve months, the following result is obtained:

TABLE.

Showing Deaths by Acute Respiratory Diseases, April, 1877, to March 31st, 1878, in 37 Localities.

April	May	June	July	August	September	October	November	December	January	February	March
35	33	30	3	30	33	26	33	41	81	50	58

TABLE.

Showing Deaths by Acute Respiratory Diseases, April, 1878, to March 31st, 1879, in 38 Localities.

April	May	June	July	August	September	October	November	December	January	February	March
49	48	32	22	20	29	33	35	70	125	71	39

ALCOHOLISM.

Fifty-two deaths are reported as by alcoholism, viz., 38 males and 13 females—the sex of one being unascertained. Two facts are noticeable in connection with this disease, as shown by the mortality table, that of the nativities of the deceased 37 were foreign born, and that of these none were Chinese; of the remainder, 5 were born on the Pacific Coast and 10 in the Atlantic States. The exemption, so far as it appears of the Chinese from the fatal effects of this vice, is somewhat remarkable, when it is known that in some of the cities intemperance and alcoholism, in their most disgusting features, are frequently the result of the free indulgence in “Chinese brandy”—made in China of rice—a most “villainous stuff,” intensely intoxicating, but resorted to on account of its cheapness. It is a common remark that a man can sooner get drunk on five cents invested in “Chinese brandy” than from many times that amount expended in the common liquors of home manufacture. It bears the same relation to ordinary liquors that nitro-glycerine does to gunpowder. That the Chinese themselves do not use it to greater excess is due, perhaps, to their knowledge of its deleterious properties, and, possibly, to the control that the heads of the companies exercise over them.

FEVERS—EIGHTEEN HUNDRED AND SEVENTY-SEVEN.

The only fevers whose prevalence justifies particular reference are classified as typhus and typhoid, and remittent and intermittent. The former is almost a misnomer as applied to the fevers of California, very few cases having ever been observed here. In fact the common term typho-malarial would probably cover a large majority of what are set down in the reports as typhus and typhoid. The whole mortality by this class is seen to have been 292, of which 214 were in the coast towns, including San Francisco; 38 in the coast valleys; 33 in the interior valleys; and 7 in the mountains.

Intermittent and remittent fevers, though far more prevalent than the above, if we regard the entire State, are differently arranged as to localities. The entire mortality is set down at 46, of which 22 were near the coast (at San Francisco); 8 in the coast valleys; 15 in the interior valleys; and 1 in the mountains.

Of the fevers of California, Dr H. Worthington, one of our correspondents, has furnished an account in his report from Los Angeles:

The last report of the California State Board of Health records a mortality of four hundred and six against fevers. The classification for statistical purposes is sufficient. But in every locality there are special and characteristic forms of fever observed by the local practitioner which, in themselves, differ materially as regards symptomatology, prognosis, and treatment, from the accepted orthodox types. Southern California offers no exception to this rule. Indeed, the peculiar forms of disease that are, as it were, indigenous to a climate acknowledged as exceptionally excellent, ought to be more or less familiar to the profession. For the death-rate may not be a true indication of the prevalence of disease in a given locality, as instanced in Dr. Hatch's report in the case of Yreka, Siskiyou County, where malarial diseases prevail "to the extent of seventy-five cases in the hundred" during certain months, and yet the mortality, from all fevers combined, is only four. And so it may be said, if the combined mortality of fever in Santa Barbara and Los Angeles is only thirty-six, these figures do not settle the question of the immunity of the localities mentioned from malaria.

The statistics of the State Board have established this fact, that malaria is found everywhere throughout California, and the conditions surrounding the etiology are about the same everywhere, for this paludal poison is not confined to the valleys and moist lands, but is present as well in our foothills, in our driest *mesas*, and on the highest mountains. Still, of the true malarial types the cases are few, mostly imported, this side of Bakersfield. Essential fevers are rarely seen. The specific typhoid fever is an exceedingly rare disease. The majority of cases reported as typhoid, when investigated, fail to reveal specific lesions of the pythogenic disease. The same observation applies also to typhus fever. Woodward's disease, called typho-malarial fever, is the prevailing continued fever. It is met with most frequently during the summer months. The symptoms, as observed here in an ordinary case of this affection, correspond to this description: "Daily remissions and exacerbations, rarely intermissions, and gradually, after a few days, the fever becomes continued, so that a typhoid condition, sometimes adynamic, is established." A typical case is difficult to picture, for the reason that in some cases the malarial element is predominant, and in other cases evidences of septic poisoning are unmistakable. The skin is more or less pigmented, of a brownish yellow hue; the face wears a listless expression; the tongue is generally red and dry, rarely brown; and there may or may not be sordes; the breathing is hurried, and there is often a cough with mucous sputa. The heart is usually involved, denoted by feeble impulse and ventricular debility, either at apex or base. The spleen is enlarged, hepatic tenderness is marked. The abdomen is tympanitic, but rarely tender, and constipation is oftener present than diarrhea. Pains in the bones, headache, and quiet delirium are often present. These symptoms are representative of an uncomplicated case. There have been reported a few cases of congestive chill, followed by an attack of this fever. A certain periodicity may generally be noticed as regards the chill. A cold stage may come on regularly every day, or every third day, if unanticipated by quinine, throughout the course of the disease—a symptom so characteristic as to be almost diagnostic. In the course of a few cases the violent pains in the bones, succeeded by fever and sweating, are suggestive of relapsing fever, inasmuch as these symptoms recur at intervals of a few days.

More than one practitioner in this neighborhood would look on typho-malarial fever as an essential disease—indeed, the peculiar pathological lesions, the thermometric curve, and the symptomatology would give color to this belief.

The classic chill and fever is rarely met with here, except, perhaps, along the river bottoms and among some of the *cienegas*. Instead, "masked fever" and "dumb ague" are common. Patients may suffer a long time with the latter, which many methods of treatment fail to cure. Nevertheless, a change of air is generally effective—those inland going to the seaside; those near the sea resorting to the mountains and foothills. The best prophylactic against dysentery, malarial, typho-malarial, and mountain fevers is immediate change of climate. Malarial neuroses are common. Supra-orbital neuralgia is very often met with. Intercostal neuralgia is not infrequent. Sciatica, undoubtedly malarial, is sometimes observed.

Dr. McFarland, of Compton, reports a very interesting case of paralysis, malarial in origin, complicated with hysteria. Malarial hæmaturia has also been observed. Miasmatic poisoning produces many remarkable disorders of the nervous system, and here, at least, not a few of these primary malarial neuroses run into typho-malarial fever, if not controlled by anti-periodic treatment. The majority of informants do not believe in the accepted notion that hepatic diseases are common here. It is denied that hepatic abscess, "bilious fever," and other liver troubles are more frequent here than elsewhere. Miasmatic pneumonia, although little studied, little understood, and not often recognized, is nevertheless met with here. The cases reported are unquestionable, and do not differ much from similar cases that occur in Kentucky and South Carolina, and probably in some of the other States.

But this question of malaria has a direct significance to all interested in climatology, more especially here, because Southern California stands in reputation elsewhere second to none as a health resort. For, let malaria be assumed to exist in any neighborhood, and its influence on consumption becomes a question of vital importance. The toxic effects of malarial fever are more apparent on the consumptive—a class of cases peculiarly susceptible to miasmatic poisoning—for, to the already depraved condition of the blood due to the lung disease, there is added an insidious degeneration of the vital forces, produced by malaria. How common is the experience of the practitioner in California, with patients who come from malarial districts in the South or the West, hoping to receive rejuvenation in our climate: yet the benefit derived is too

often counterbalanced by the morbid influences of miasm. The hectic of consumption and the fever of malaria form a terrible combination. Indeed, the relationship between malarial fever and consumption is a subject worthy of extended investigation; and further researches cannot fail finally to pierce the misty veil that obscures the etiology of these diseases.

There has prevailed to some extent a disease that has characters in common with the cerebro-meningitis of Trousseau. It has been called "miasmatic brain fever" by some of the practitioners here. Probably "cerebral fever" is the most expressive term. During the months of June and July, 1878, it was met with not infrequently, and usually proving fatal. The disease, in its approach, is insidious and slow. In the beginning there is generally noticed a chill, or a cold stage, followed by fever. This may be repeated daily, until constant fever, headache, restlessness, vomiting, and great prostration confines the patient in bed. On the fourth or fifth day the more violent symptoms subside, and the patient sinks into a somnolent condition. The pupils are as a rule dilated; there may or may not be photophobia; the skin, especially of the head, is hot and dry; the vomiting is often intractable and constipation obstinate; the abdomen at first is swollen, but later on is retracted (excavated); the urine is copious, limpid, and contains an excess of the phosphates; the heart is weakened, and the pulse moderately quick and full, and the temperature is rarely high, except before death. A highly interesting symptom is noted in some cases, bearing on the question of prognosis. A day or two days preceding death the child may appear to suddenly improve. There is every evidence that recovery will ensue. But the thermometer shows a frightful increase of temperature, such as is incompatible with life if continued. Moreover, this "lightening before death" is soon followed by collapse, and the patient becomes comatose. The respiration in some cases resembles in every particular "Cheyne-Stokes breathing." The *tache cerebrale* has not been observed. Nor have petechie been seen in any cases. The treatment seems to be a matter of judgment, guided by special indications. But quinine, bromide of potassium, aconite or digitalis, iodide of potash, ergot, and cathartics form the basis of any medication. Cold applications to the head and counter-irritants are also indicated. One case is reported in which salicylic acid was tried unsuccessfully.

As regards anatomical lesions nothing definite is known, as it seems impossible to obtain autopsies. Some practitioners would look on the disease as essentially malarial in origin; others, as a true meningitis; while some claim that there is a special poison which, cooperating with auxiliary causes and referred to the brain, produces this characteristic set of symptoms. Following Boudin, the disease could be called cerebro-typhus. The disease, having to some extent been prevalent during certain months, would be evidence that the cause lay in some special poison. It may be added that the fatality from zymotic diseases among the natives is enormously greater than the same among the imported population. Many causes could be adduced to explain this fact. But in every town there is this native element. Their particular part of the town is acknowledged as unhealthy and frequently the starting point of infectious disease. The crowded condition of their apartments, defective drainage, their ignorance of, and their disregard for, all sanitary laws, and their unexampled debauched habits, render them easy victims to specific or paludal poisons. This would be an unquestionable factor to be considered in statistical tables.

Cases of typho-malarial and pneumatic fevers are usually immured in the darkest corners of adobe houses, and it is no wonder that with the other unfavorable surroundings the mortality is so frightful. Indeed, excluding the native element and the importations of consumptives who come here to die, the death percentage of Southern California will compare favorably with any other State.

July.	Pulsations.	Respirations.	July.	Pulsations.	Respirations.	July.	Pulsations.	Respirations.
4	80	20	8	160	50	12	170	60
5	100	28	9	120	36	13	200	76
6	120	30	10	130	38	14	220	10
7	140	42	11	128	30			

Dora Millar, æt. three years. "Cerebral fever."

EIGHTEEN HUNDRED AND SEVENTY-EIGHT.

In 1878 the total mortality by remittent and intermittent fevers is given as 53, of which 23 were in the Sacramento and San Joaquin Valleys—less than one-half—although, according to the reports of "Prevalent Diseases," the ratio of cases of periodical fever occurring in these valleys as compared with all other portions of the State is very much greater. The fact is another corroboration of the statement often made as to the mildness of the malarial fevers of the valleys of California. Probably not more than two-thirds of the

cases occurring in the localities from which the reports of sickness are received ever find their way into the returns, many of those who suffer being in the habit of treating themselves.

Typhoid fever, according to the reports, is responsible for 205 deaths in 1878, or about 1 in 32 of the total mortality by all causes.

DIPHThERIA.

The total deaths by diphtheria in 1877 were 1,163, of which 369 occurred outside of San Francisco. Regarding the mortality of the entire State—all of the localities from which reports have been received—we find that 15 per cent. died of diphtheria, or 1 in 6.4. Of the entire number there occurred in January 170, in February 156, in March 136, in April 105, in May 80, in June 75, in July 62, in August 68, in September 64, in October 76, in November 91, in December 80; or, in what is commonly regarded as the rainy season, November to April inclusive, 737, and in the dry season 426; an excess, in the first period, of 311. Were the reports from each of the localities named in the "table" complete, embracing each month in the year, we might draw some important deductions from the relative prevalence of the disease at the two seasons. Some, however, are but partial. Taking those only which are complete or nearly so, 14 in number, not more than two months having been omitted, we obtain the following result: For the rainy season 672, and for the dry season 402, the difference being 270—slightly less than the above. Yet, by an examination of the "table" it may be observed that of the deaths by diphtheria enumerated in the *partial* reports, viz., Dixon, St. Helena, Napa, Bloomfield, Sonoma, Visalia, Modesto, San José, Red Bluff, and Davisville, 23 were in the *dry* season and 65 in the *wet*, the difference being 42.

Again, separating the reports according to their localities—that is, into the four prominent regions, mountains, coast, coast valleys, and interior valleys—we are able to obtain some information, imperfect though it be, as to the presence of the disease in the different parts of the State.

Such a division of the State very much facilitates a review of its sanitary condition; and not only so, but expresses to some extent in tangible characters the influence promotive of disease prevailing in each. In any review of the kind it is much to be regretted, however, that the number of localities from which the reports are received, especially in the mountains, are not more numerous. Only those localities are included from which nearly regular reports have been obtained; coast or near the coast, 6 localities (including San Francisco), 888 deaths; coast valleys, 5 localities, 111; interior central valleys, 5 localities, 49; mountains, 1 locality—the only one from which diphtheria was reported—26. Omitting the large city of San Francisco from the first of these divisions, the result would stand 99. The statistics, then, of diphtheria, as it affected different parts of the State, so far indeed as they are of any value, by reason of the small number of localities reporting, serve to show that the disease was somewhat more prevalent on the coast and in the coast valleys than in the central interior valleys and in the mountains, and that of these the coast valleys presented the greatest number. This predominance is yet more forcibly shown by a comparison of the

deaths by this disease with the population represented by the several localities. Taking the most correct estimate obtainable we find the result to be: On and near the coast (San Francisco excluded), 5 localities, population 16,700, deaths by diphtheria 99; in the coast valleys, 4 localities, population 25,500, deaths by diphtheria 102; interior central valleys, 5 localities, population 48,400, deaths by diphtheria 49; mountains, 3 localities, population 8,400, deaths by diphtheria 26.

SEXES.

Examined according to the sexes, the "table" shows that deaths among males predominated—593 and 535—10 being *unascertained*.

AGES.

The greatest prevalence was among children under 5 years of age—678—an excess of 218 over deaths among all other ages—nearly three-fifths of the total mortality. Between 5 and 10 years there were numbered 375; from 10 to 20 years, 50 cases; while all other ages, known and unknown, furnished only 35. Of the latter, 2 were between 50 and 60, and 1 between 60 and 100.

EIGHTEEN HUNDRED AND SEVENTY-EIGHT.

The record for 1878 exhibits a decided diminution in the mortality by diphtheria. While, in 1877, 24 localities reported 1,163 deaths by this disease, in 1878 we find only 363 deaths in 39 localities; or, if the analysis of the "tables" be confined to towns and cities outside of San Francisco, 351 in the former year and 171 in the latter; and this notwithstanding the much greater regularity of the reports. Selecting from the table for 1878 only those localities from which reports have been regularly received for six months or more, 27 in number, and arranging them according to their geographical positions, and omitting San Francisco, it is observed that in the interior central valley towns, 7 in number, there were 66 deaths; in the coast valleys, 8 in number, 58 deaths; in the coast cities, 5 in number, 26 deaths; in the mountains, 4 in number, 10 deaths; giving predominance to the interior valleys over the coast region, as seemed to be the legitimate deduction from the analysis of the record for 1877.

The following table will exhibit the total mortality by this disease in all localities reported:

TABLE

Of Deaths by Diphtheria, with Sexes, Ages, and Nativities—1877.

CITIES AND TOWNS.	Total Deaths.	SEXES.			AGES.									NATIVITIES.			
		Male	Female	Unascertained	Under 5 years	5 to 10 years	10 to 20 years	20 to 30 years	30 to 40 years	40 to 50 years	50 to 60 years	60 to 100 years	Unascertained	Pacific Coast	Atlantic States	Foreign Countries	Unascertained
San Francisco	794	424	370	—	488	253	32	15	2	2	1	1	—	691	71	32	—
Sacramento	56	23	13	—	21	13	2	—	—	—	—	—	—	33	3	—	—
Stockton	13	7	6	—	6	5	—	—	—	2	—	—	—	10	1	2	—
Petaluma	22	—	—	22	—	—	—	—	—	—	—	—	22	—	—	—	22
Dixon	3	3	—	—	3	—	—	—	—	—	—	—	—	—	3	—	—
Placerville	26	12	14	—	12	13	—	—	—	—	—	1	—	23	3	—	—
Los Angeles	50	25	25	—	33	13	3	1	—	—	—	—	—	37	2	2	9
St. Helena and vicinity	8	2	6	—	6	2	—	—	—	—	—	—	—	6	2	—	—
Napa City	3	—	3	—	1	2	—	—	—	—	—	—	—	3	—	—	—
Watsonville	12	6	5	1	8	4	—	—	—	—	—	—	—	12	—	—	—
Folsom	4	1	3	—	1	3	—	—	—	—	—	—	—	4	—	—	—
Santa Cruz	35	20	15	—	13	20	2	—	—	—	—	—	—	31	3	1	—
Santa Barbara	20	10	10	—	12	6	1	—	—	—	1	—	—	17	3	—	—
Antioch	5	2	3	—	2	2	1	—	—	—	—	—	—	5	—	—	—
Cloverdale	19	7	12	—	7	5	—	—	—	—	—	7	—	19	—	—	—
Sonoma and vicinity	3	1	—	2	—	1	1	—	—	—	—	1	—	1	—	1	1
Bloomfield and vicinity	6	—	3	3	5	—	1	—	—	—	—	—	—	6	—	—	—
San José	30	13	17	—	18	8	4	—	—	—	—	—	—	28	2	—	—
Red Bluff, Tehama County	14	8	6	—	4	5	5	—	—	—	—	—	—	12	2	—	—
Ventura	27	14	13	—	11	8	8	—	—	—	—	—	—	26	—	1	—
Davisville and vicinity	1	—	1	—	1	—	—	—	—	—	—	—	—	1	—	—	—
San Mateo County	11	4	5	2	6	5	—	—	—	—	—	—	—	6	5	—	—
Visalia and vicinity	2	—	—	2	1	1	—	—	—	—	—	—	—	2	—	—	—
Modesto	19	8	11	—	10	8	1	—	—	—	—	—	—	17	2	—	—
Totals	1,163	591	540	32	669	377	61	16	2	4	2	1	31	990	102	39	32

TABLE

Of Deaths by Diphtheria, with Sexes, Ages, and Nativities—1878.

CITIES AND TOWNS.	Total deaths.	SEXES.			AGES.										NATIVITIES.			
		Males	Females	Unascertained	Under 5 years	5 to 10 years	10 to 20 years	20 to 30 years	30 to 40 years	40 to 50 years	50 to 60 years	60 to 100 years	Unascertained	Pacific Coast	Atlantic States	Foreign countries	Unascertained	
San Francisco	192	100	92		116	67	8					1		161	24	7		
Sacramento	24	10	14		13	9	2							21	1			
Stockton	9	6	3		4	4	1							8	1			
Petaluma	2			2								2		1			1	
Marysville	8	2	6		4	4								7	1			
Placerville	2	1	1		1	1								2				
Los Angeles	23	12	11		10	13								20	3			
St. Helena and vicinity	5		5		3	1	1							3	2			
Folsom	1	1			1	1								1				
Santa Cruz	7	5	2		5	1		1						5	2			
Willows	2	2			2									2				
Santa Barbara	4	1	3		2	2								4				
Downieville and vicinity	1	1			1									1				
Antioch	1		1			1								1				
Cloverdale	2		2		2									2				
Sonoma and vicinity	1	1			1												1	
Cedarville, Modoc County	4		4		1	2	1							4				
Santa Rosa	3	1	2		2	1								3				
San José	2	1	1		2									2				
Vallejo	1	1				1								1				
Shasta	2	1	1		1	1								2				
Red Bluff, Tehama County	2		2			1	1							1	1			
Lakeport	3			3								3					3	
Ventura	15	7	8		4	7	4							15				
Chico	20	10	10		10	7	3							6	2		12	
San Mateo County	4	4			2	2								4				
San Diego	1		1			1									1			
Tulare County	21			21								21					21	
San Luis Obispo	1	1			1											1		
Totals	363	168	169	26	187	127	21	1				1	26	277	38	10	38	

The prevalence of diphtheria during the year under review (1878) may, however, be more intelligently understood by the reports of "Prevalent Diseases," which many of the correspondents of the State Board have kindly furnished on "postal card" blanks. The diseases specified on the cards being such only as are commonly regarded as belonging to the zymotic class, or diseases, which, under strict sanitary discipline, are considered to be more or less preventable, they have been found, in practice, to be convenient, and, in the results obtained, entirely satisfactory. It has been objected to these reports that they are likely to be unreliable on account of errors in diagnosis. Such errors may possibly occur. They are incidental to all general medical statistical reports; they especially affect the vital statistics of every city and State where such statistics are registered; they arise from the imperfection of the human judgment. To this extent, doubtless, the reports received at the office of the State Board of Health are defective, no farther. They are made by gentlemen of whom it is believed that each one is fully competent for the work, and by whom it is gratuitously performed at no little sacrifice of time.

Assuming then an equal degree of reliability for these reports with those elsewhere, a chart has been prepared showing the extent to which a few of the more prevalent diseases occurred, and arranged

in such a manner as to exhibit their relative prevalence in different sections of the State. They embrace 19 localities, from which reports have been received with sufficient regularity to justify their representation on the chart, viz., 5 from the interior central valleys; 4 from the coast, or near the coast; 4 from the mountains, and 6 from the coast valleys. The percentage for diphtheria is represented by the dotted line (No. 4), and with it croup is included, inasmuch as the membranous variety of the latter was specified, and as it was observed to occur during the prevalence of diphtheria so uniformly as to leave little room for doubt as to the identity of the two diseases.

Briefly commenting on the chart, we find diphtheria to have prevailed most on the coast, next in the coast valleys, next in the central valleys, and least in the mountains. The sum of the percentages for each of these sections for the year being, in the order above mentioned, 160, 124, 90, 66 (December omitted from the last). The inequality of the number of localities reporting from each of these divisions does not materially change the result. The monthly prevalence of the malady is shown by percentages to be greatest in January, 64, February, 60, March, 47, and December, 65; or, by seasons, greater during the rainy season than during the dry. The lowest percentage of any one month was 16, in September; next 19, in August; next 21, in April.

For the purpose of arriving at the most reliable conclusions as to some of the more important features of the disease under consideration, more especially its causation, a circular letter was addressed to the correspondents of the Board, and to some other qualified medical gentlemen in the State, soliciting answers to the following questions:

1. Has diphtheria prevailed to any extent in your locality or its vicinity during the year just ending?
2. Has there been an increase or diminution in its prevalence as compared with the previous year?
3. During what months has it most prevailed? (Please state, if possible, the period of its *first* and *last* appearance during the year.)
4. Have you been able to trace the disease to any special local causes, such as dampness of locality, defective drainage, imperfect sewerage, impure water, or other insanitary conditions?
5. Has there been any marked difference in its prevalence during the *dry* and *rainy* seasons?
6. Has it been, according to your observation, contagious? Please state any facts, coming within your notice, bearing upon the question of its causation.

To these questions replies have been received from twenty-four physicians resident in different parts of the State.

Dr. W. C. Baylor, Willows, Colusa County:

No. 1—Cases fourteen, within a radius of fifteen miles.

No. 2—There has been an increase.

No. 3—In September, 1878, closing with December 31st, 1878.

No. 4—All the cases occurring in this vicinity have been on the plains or in the foothills—only one case in town. I could discern no local cause sufficient, in my judgment, to produce any disease.

No. 5—All the cases coming under my observation have been during the *dry* season. (The fall of 1878 was remarkably dry, there having been but little rain until after the middle of January, 1879, and the dry north wind prevailing.)

No. 6—In none of the families had there been any exposure for the first cases that occurred. After this other members of the same families were attacked. One case took the disease after being in contact with children who had recovered and had been going around for a month. I do not think the child contracted the disease by this association.

Dr. W. T. Bell, Winters, Yolo County:

No. 1—There has been but one case, introduced from Knight's Landing, but by using great precautions it did not spread.

No. 3—The above case occurred in August last.

No. 6—It undoubtedly is. A San Francisco family lost one child in that city in 1877—removed here with two children who were ill with the disease, attacked one month after the death of the first. Another family visited the centennial exposition. One child contracted the disease in Pennsylvania—returned, and five children of the same family were taken sick with it, proving fatal in one.

Dr. G. W. Westlake, Red Bluff, writes the following:

In reply to questions regarding diphtheria, I take pleasure in communicating the following information: The first case that ever occurred in this locality was in October, 1877. From that time it assumed an epidemic form, and lasted until March, 1878. Only four cases have

occurred in the town since that time, and those during the month of September. There were, I think, fifty well-marked cases from October, 1877, to March, 1878, besides numerous cases of diphtheritic sore throat, without much constitutional involvement. Of the fifty cases, sixteen proved fatal. The ages of those attacked were from three to seventeen years; sexes about equal. About one-half the fatal cases were of the nasal and laryngeal forms. The disease seemed to originate here, and we could give no good reason for its origin. It attacked families almost simultaneously in the western, eastern, and southern portions of the town. It had no respect for condition in life. (The colored population suffered more than the white in the number of deaths.) The sanitary condition of the town was equally as good as in former years. We could not trace its origin to any local cause whatever. I have no positive proof of its contagiousness.

Dr. A. B. Caldwell, Marysville:

No. 1.—It has prevailed to an extent, during the nine weeks past, unknown previously.

No. 2.—There was no really authentic case during the year 1877, within the city limits, though several were so reported in the vicinity of the town.

No. 3.—The disease prevailed to its greatest extent between the latter part of October and the middle of December, 1878. After careful inquiry, I find the earliest authentic cases to have occurred about the 17th of October, and the last genuine case about the 28th of December, 1878. During the early months of last spring there was one case reported, but, to my belief, incorrectly.

No. 4.—There seems to be no special local cause, though I believe, with one exception, the disease appeared only in such portions of our city as were not supplied with the city water, but from ordinary wells of an average depth of fourteen to eighteen feet, and situated in localities which, from their lowness and their proximity to privies of greater or less depth, were poorly adapted to supply water for drinking purposes. In all, save one case referred to above, the sanitary conditions were imperfect. These remarks apply only to the cases originating within the city limits. There were cases brought from one locality, sixteen miles from town, at various stages of the disease, and all proving fatal. * * * I feel almost positive that within the city limits there were not more than thirteen genuine cases, of which eight were fatal, including those from sixteen miles away. Of course there was the usual number of so-called cases of diphtheria. Being cognizant of the surroundings (at home) of the cases brought to town for treatment I am sure sanitary neglect might have had its bad influence.

No. 5.—During the prevalence of the disease the weather was, of course, much the same as in your city. Moisture could have been no predisposing cause; indeed, there was a decided falling off as soon as the December rains came.

No. 6.—The first two cases occurred simultaneously in one household, and were immediately fatal. Four days after the termination of these two fatal cases the third and only remaining child was attacked, with a like result, in a very few days. Other children in the neighborhood were not attacked, although none were immediately exposed to contagion. The next lot of cases occurred in a remote portion of the town, and, of four in one small neighborhood, two were, within ten days, fatal. The other cases, fatal and otherwise, did not seem to follow at a time or in a manner to suggest contagion to be much dreaded. In fact, there seems to me to be strong evidence in the cases under my own observation against the theory of contagion in the ordinary acceptance.

Dr. G. W. Davis, Chico:

No. 1.—Yes, it has prevailed to a considerable extent.

No. 2.—There has been an increase.

No. 3.—During the months of March, April, and May. Its first appearance was in October, 1877, and it still prevails to a small extent.

No. 4.—Yes; dampness of locality and defective drainage, and, in several instances, impure water.

No. 5.—Yes; has been prevalent during the rainy season.

No. 6.—I answer, emphatically, no.

To enlarge more upon the question of the causation of diphtheria: Allow me to say that in every instance in Chico and vicinity the cause has been traced to dampness of locality. In the Town of Chico most of the residences are densely shaded, and, with few exceptions, have been built low upon the ground. Last winter was one in which an unusual amount of rain fell, and withal most of the time it was warm and pleasant, so much so that vegetation sprang into new life quite early, and by the middle of April the tree foliage was dense. This prevented the warm rays of the sun from penetrating and relieving the saturated soil of its superabundance of water, as well as drying the porches and entrances to those houses that were thus so densely shaded by trees and running vines. During the summer there was a remarkable absence of north winds: this with the rains, early and late, the heavy foliage, and many of the houses being low upon the ground, was the true cause of much fatal diphtheria in the month of May. Now and then fatal cases occurred throughout the entire summer. The cause of cases upon which I was called to attend in the country was directly traceable to overflowed cellars, or, as in one or two, where the water had seeped into them. For nearly two months the cold dry north winds have been prevailing, during which time diphtheria has very rapidly diminished. At present writing there are no cases.

Dr. W. R. Fox, San Bernardino :

No. 1—No.

No. 2—A rare disease here as yet. Some doctors see it in every case of sore throat.

No. 4—No.

No. 5—No.

No. 6—No, not in the ordinary acceptance of the term.

Dr. K. D. Shugart, Riverside, San Bernardino County :

No. 1—No.

No. 2—No.

No. 3—We have not had any.

No. 6—I do not believe diphtheria to be contagious as a rule. Pseudo-membranous croup and diphtheria I look upon as distinct diseases. I have seen but one case of diphtheria and three cases of pseudo-membranous croup since I have been here—a little over eight years. The croup occurred during damp weather.

Dr. C. A. Kirkpatrick, Redwood City :

No. 1—It has prevailed extensively at Mayfield, seven miles from Redwood City; to a less extent at Menlo Park, four miles distant; but to a very limited extent in Redwood City, or nearer thereto than Menlo Park.

No. 2—There has been an increase during the last year over any previous year for fourteen years. During January, February, and March, 1875, it prevailed to a slight extent, but disappeared until near January, 1878.

No. 3—There were a few cases in December, 1877, and in January, February, and March, 1878; then it decreased until November and December, when it now seems as if it had departed with the old year, as I do not know of a case either in Mayfield or vicinity or in San Mateo County.

No. 4—I have not. The locality of Mayfield precludes the idea of dampness or sewerage. The water supply is from wells, but remains constantly the same, and there seems to be no good reason why the disease should prevail there.

No. 5—So far as it is possible to ascertain, the disease was as virulent and fatal during November and December as it was in January and February, when the Town of Mayfield was flooded.

No. 6—It has not.

Dr. H. C. Crowder, Bloomfield, Sonoma County :

No. 1—No.

No. 2—Less.

No. 3—Through the winter months; very few cases in 1878, and these in January and February.

No. 4—I have not.

No. 5—Yes; during the rainy season it was worse.

No. 6—I am compelled to think it is not contagious.

Dr. G. M. Wells, Sonoma, Sonoma County :

No. 1—No; my reports cover three cases in one family, with one death.

No. 2—Probably a slight increase.

No. 3—The cases reported occurred in June.

No. 4—No; my observation has been too restricted. In Petaluma, where it has been so fatal, heavy fogs and damp cold winds were undoubtedly causative.

No. 6—It seemed to be sporadic in the cases reported.

Dr. B. S. Young, Santa Rosa :

No. 1—The first three months of the year—not since.

No. 2—Diminution.

No. 3—January, February, and March. It first appeared in January; abated during the summer months to reappear in September; since then we have had none.

No. 5—Prevails mostly in rainy or damp weather.

No. 6—In many instances it can be traced to contagion or infection. I believe it contagious.

Parties occupying houses where previous occupant had the disease, although the premises were fumigated, have contracted it—not in one family in such premises, but in three or four to the house, one after another.

Dr. Q. C. Smith, Cloverdale, Sonoma County:

No. 1—Only a few cases.

No. 2—Diminution.

No. 3—During winter months.

No. 4—No; it has prevailed in wet and very dry weather and places; in our village and the remote mountain localities.

No. 5—No; but most, or all, were in cool or cold weather; none in hot weather.

No. 6—We do not believe it to be contagious in the ordinary sense of the term, but we always give the children the benefit of the *doubt*. It is contagious in the strict sense of the word, however, but not infectious.

Recurring to Nos. 4 and 6, Dr. Smith adds:

No. 4—We have closely watched for some local cause for diphtheria, but have been unable to assign any cause that a larger experience did not prove a fallacy. Our cases were mostly, if not entirely, in cool or cold weather; but some were in wet and some in very dry weather. Our recent epidemic began and ended in one of the driest times I have seen here in a period of five years. Diphtheria has raged more virulently in our sparsely-settled mountain districts, where everything seemed conducive to health, than in our village; for it has never raged extensively here in Cloverdale, from two to twelve cases being the extent of an epidemic.

No. 6—We have accumulated all the oral and written information of others, and closely observed the disease in its various aspects, but have not been able to come to any *definite* conclusion, either as to its *cause* or *contagiousness*. Surely, not foul air, nor dry nor wet air, has had any influence in its causation; and often we have seen cases arise far out in the mountains, in the most secluded, clean, salubrious localities, to all appearances *de novo*; and frequently one, and in some cases two children, out of five or six, have the disease, and die or recover, and the other children live and closely associate with the sick ones and yet remain well; for, in some cases, there was but one room in the house, and all must stay in it.

Dr. W. W. Hays, San Luis Obispo:

No. 1—Some scattered cases this fall just past.

No. 2—Diminution..

No. 3—During the fall and winter. I hear that diphtheria was seen in the interior of the county last summer.

No. 4—No; there has been no preference shown for unhealthy localities.

No. 5—Yes; it is more prevalent during the *rainy* season, or rather during the fall or winter months. It commenced last year *before* the rains, when the nights grew cold, and the daily changes of temperature were great.

No. 6—The epidemic which occurred in this town a year ago was directly traced to contagion. A lady from Santa Maria, Santa Barbara County, where the disease had been very fatal, having lost two children, in passing through the town spent one night at the house of a friend. The disease commenced in that house. The three children were attacked, and one died. The next case I saw was in an adjoining house, and thence it spread all over the town; some of the most unhealthy localities, however, escaping, while others, whose surroundings were perfect in a sanitary point of view, were visited in a severe form. The mild epidemic which now prevails here can also be directly traced to contagion. It originated (in the practice of another physician) outside of town, in a Spanish family, who had stopping with them a friend from Guadalupe, Santa Barbara County, where the disease was then prevalent. One child died. The neighbors from an adjoining house assisted in nursing; their children took the disease, and three died. From thence it spread to the town. I saw over two hundred cases last year, and in every one there was direct evidence of contagion. Although I believe contagion to have been the cause of the spread of the disease in this locality during the last two years, it is also true that in low situations the symptoms were of a more intense character than in more favorable localities. I do not think that this severity was so much caused by the dampness (for in both epidemics the disease was most fatal before the rains) as by the lower temperature which occurs at night in low-lying situations. * * * * *

Dr. C. L. Anderson, Santa Cruz:

No. 1—Yes; several cases.

No. 2—There has been a slight decrease, perhaps.

No. 3—July and November. All cases have been sporadic, and nearly every month cases have occurred, but usually in a mild form.

No. 4—No special local causes have been discovered the past year. Some peculiar susceptibility of temperament has been noticed in most cases.

No. 5—I think not. Humidity has had but little influence as far as I have observed. Some of the worst cases have occurred at both seasons, although, on the coast here, there is usually more humidity in the *dry* season than in the *rainy*, owing to the fog.

No. 6—Yes; it seems to be contagious. Nurses, attendants, and every one coming in contact with those diseased with diphtheria have suffered, more or less, with its specific symptoms. So far as I can remember I have not known persons to have diphtheria a second time. I have heard of frequent repetitions of the disease, but am satisfied the repetitions were not diphtheria. A second attack may occur, just as in varioloid or scarlatina, but these attacks are exceptions. There is also a family susceptibility to the disease. Brothers, sisters, and cousins, with or without the slightest contact, have suffered, even when miles apart, and only some member of the family have visited the sick, and have apparently *carried* the disease from one to another. As in all contagious diseases many are entirely exempt, and never contract the disease, however close or continuous the contact. This fact is not less plainly true in regard to diphtheria.

In regard to causation, my observations warrant me in believing that there is a specific principle or germ which is propagated and diffused under favorable conditions, yet hidden to us, and which produces what we call diphtheria. More likely it is fungoid in its character, and analogous to certain "blights" that attack vegetation. * * * * *

Dr. F. Delmont, San Buenaventura:

No. 1—Yes, to a great extent.

No. 2—An increase.

No. 3—January and February, and still more in July and December.

No. 4—Yes; to dampness, defective drainage, sewerage, and, to a great extent, to impure water. Diphtheria has been more prevalent, in this county, on low irrigated lands, on the banks of the Santa Clara River, and in places where bad drainage exists.

No. 5—No.

No. 6—Yes; e. g., persons drinking from the same cup or glass used by the sick, or using the same spoon or towel, have invariably contracted the disease.

Dr. W. C. Jones, Grass Valley:

No. 1—A few sporadic cases in January, and again in December.

No. 2—About the same.

No. 3—January and December. We now have a case, January 10th, 1879.

No. 4—No.

No. 5—The cases here, in 1878 and so far in 1879, were during the time of *dry, cold, north* winds.

No. 6—Yes; four cases in one family during one month, each separately. Attended three cases in December, croupal in form, two of them in one family, caused apparently by cold north wind; one died after tracheotomy.

Dr. J. M. Briceland, Shasta:

No. 1—It has not.

No. 2—In 1878 diphtheria first appeared in Shasta and vicinity; *five* cases; three made good recoveries, but two died. Both the latter were in the same family—very malignant. There was no further spread of the disease.

No. 3—About the 15th of August to September 1st, 1878.

No. 4—Strict inquiry failed to develop any insanitary condition.

No. 5—All cases during *dry* season.

No. 6—In the family in which the two deaths occurred, the disease was not communicated to other members, nor to any of the many visitors to the sick-room, although both cases were of a malignant type. I do not believe it is contagious. In Birney Valley, distant sixty miles from Shasta, during the months of July and August (dry season) several cases were reported. The fatality seemed to be confined to families on water courses—Hatchet Creek, Cow Creek, etc. The cause was undoubtedly local, the cases being confined to a few families. Since September, no cases reported.

From Sacramento, Dr. G. L. Simmons gives the following answers:

No. 1—Yes.

No. 2—Diminution.

No. 3—First occurred in August. Sporadic cases occurred until January.

No. 4—No.

No. 5—I think my worst cases have occurred in the *dry* season.

No. 6—I inclose a diagram intended to represent, approximatively at least, the localities of an epidemic of diphtheria which prevailed during the past season. The majority of the infected premises are in a district of acknowledged salubrity—higher than the surrounding country, supplied with good water, and with well drained soil. The form of the disease, according to the statements of attendants, was of a malignant type, and of the thirty-three cases which occurred, eight terminated fatally.

According to my observation in this district, as in others, I believe the disease to be highly contagious. At the commencement of the epidemic children out of infected families were regularly sent to the public schools (shown in the diagram), and all who suffered were more or less exposed to the contagion. In one of the cases where there was no school attendance, the patient had watched with a child dying of diphtheria. In another instance, a diphtheritic case from this locality was removed to the bank of the Sacramento River, in Yolo County, several miles away, and became the center of another epidemic which desolated several homes.

Whether the insanitary conditions which surround the hide-curing establishments, glue factories, and slaughter houses (exhibited in the diagram) had aught to do with the causation of this epidemic, I believe to be a question open for further investigation. It is certain, however, that the persons employed in these places escaped without an attack, while those in the neighborhood, under supposed healthier conditions, fell victims to the malady.

Dr. Alemby Jump, Downieville :

No. 1—At Goodyear's Bar, on the Yuba River. Seven cases in December: four in one family, two in one, and one in another. The disease made its appearance on the 18th of December—five cases in three families on that day. Three days afterward two cases appeared in two of the families before referred to.

No. 2—No particular change in this respect. It strikes, then disappears for years, then strikes again. In November, 1867, a family of seven was stricken at Goodyear's Bar; four cases occurred, and three died. There has been no diphtheria on that bar from that time until last December.

No. 3—Late in the fall or early winter. It commenced December 18th, and continued to the end of the year. In 1867 it commenced on the 15th of November—two cases; four days afterward one; and in six days the fourth case, which recovered.

No. 4—Imperfect sewerage might be a cause. The weather had been extremely dry, and continued so until the end of the year. There was less water than had ever been observed before.

No. 5—Diphtheria seems to prevail at the end of a long dry season, when fall runs into winter. Dry cold weather seems to be productive of the diphtheritic influence.

No. 6—Yes. In my late cases all the children in each family were sick, except one. In 1867, in a family at Goodyear's Bar of seven children, two were past recovery when called, and died the next day; a third was taken the following day, and was treated eleven days and died; while he was under treatment a fourth was taken sick, and I had a fine exhibition of what Slade called the punched tonsil. It recovered. At my suggestion the well children were removed from the family residence; but upon losing the first two the mother had the children brought home, but kept the well away from the sick. The greatest cause of diphtheria in the mountains, in my opinion, is the proximity of privies to residences; especially is this the case in the higher mountains, where the snow falls the deepest.

Dr. Geo. S. Farley, North San Juan :

No. 1—Yes; 1878.

No. 2—Diminution. In the two years previous it prevailed as a terrible epidemic.

No. 3—It chose no particular month, and its last appearance was in October.

No. 4—No; for it appears to have attacked the cleanly as well as the filthy families, the dry as well as the damp localities, and it had no respect for person or place.

No. 5—No; no change of weather made any difference.

No. 6—Yes; especially when persons have been indiscreet enough to neglect ventilation, or to lie upon the bed with, or kiss the affected person. It was distributed by persons in whose families the disease had been, either by a change of locality or by sending children to school within six weeks. Where the person changed locality, at that locality within ten days the disease would start; and where children were sent to school, those sitting next to them would be the ones first attacked by the disease; apparently the more healthy the locality the more virulent the disease.

After the epidemic that had prevailed here on this ridge for two years and more had ceased, one case, apparently *sui generis*, attacked one of the healthiest localities upon the ridge. It had been specially cared for and kept away from any contagion. * * * *

Dr. W. H. Patterson, Cedarville, Modoc County :

Previous to November, 1877, diphtheria was unknown in Modoc County. Its first appearance was at Alturas, the county seat, at the time mentioned. It prevailed during four months in that village and vicinity, claiming one or more victims in nearly every family. At one time those who were well were hardly enough to care for the sick. In March it disappeared, to return in one family the following June. In Alturas the total number of deaths was twenty-three (23), I think. Of these none were adults, and but two males. In April, 1878, it attacked fifteen persons in Surprise Valley, of whom none died.

As to the origin of the disease, I cannot but think that the poison to which it was due emanated from a large body of swamp land lying to the windward of the affected district. The winter of 1877-78 was an unusually open one here. Premising this and the further remarks that our winds come almost constantly from the southwest, and that the affected district lay to the northeast of the large swamp referred to, a reasonable cause for suspecting this origin of the disease will be seen. As the epidemic advanced and it was observed that those living nearest the swamp were the most severely affected, and that not a single case occurred to the windward thereof, the suspicion became almost a certainty. This was still further strengthened by the outbreak in Surprise Valley, which lies to the east of Pitt River Valley, in which latter is located the swamp spoken of. The two valleys are separated by a high mountain range, with numerous cañons or gaps traversing it from west to east; and through these gaps the wind from the southwest blows with great constancy. No case of diphtheria ever occurred in Surprise Valley, except in persons living near the mouths of the three cañons by which the winds sweeping the Pitt River swamps reach Surprise Valley. Ten cases occurred in one large family at the mouth of the cañon, most directly in the line of this wind. Other families more remote

from the cañon, but in the line of the air current, suffered from sore throat, which may have been mild diphtheria. At the mouth of the second cañon no family of children dwelt, and one case of the disease in an adult appeared. At the Cedarville Pass two families living nearest the cañon, and no others, were affected. The fact that the disease appeared only in families living at the mouths of the cañons seemed to show that the infection came on the winds from the southwest; and the further fact, that of a dozen cañons it was only those three carrying winds from the Pitt River swamps that seemed to be inlets for the poison, would appear almost conclusive proof of the theory already advanced. What, then, was this poison? Did it owe its origin to some peculiarity of the moistened soil; to decaying vegetable matter; to water virtually stagnant, or to a combination of two or more of these conditions? That it was to some of these seems probable, and an isolated instance occurring at Alturas in June renders this more likely. When the winter epidemic had been subdued, perhaps by the spring freshets, an overflow of the town site took place, leaving the cellar under the "Combs House" filled with decaying cabbage, turnips, and potatoes, and stagnant water. Mr. Combs' family had, during winter, at my suggestion, occupied rooms in the upper story of the house; but now that the pestilence had spent its wrath and gone, they unadvisedly took up their abode in rooms on the lower floor and immediately over the cellar. The result was three attacks and two deaths in the family. My experience, as stated, leads me to believe:

First—That the poison to which diphtheria is due may originate from stagnant water and decaying vegetable matter.

Second—That this poison may be carried to considerable distances on the wind.

Third—That in its transference the poison may be diluted.

Fourth—That the violence of the attack varies in part according to the dilution of the poison, and in part according to age, sex, constitution, and previous health of the patient.

Fifth—That in this, as in ague, elevation above the immediate surface of the ground may afford immunity from attack.

I may further add, that Alturas is located on alkali bottom land, near the confluence of the North and South Forks of Pitt River; is without sewers of any kind; has but poor natural drainage; is supplied with water for all purposes from Pitt River and from shallow wells in the alkali soil; that the drinking water is distasteful to strangers, who generally suffer from diarrhœa on their first visit; and that in 1876 the town and neighboring country was visited by a very fatal typho-malarial fever.

The following communication from Dr. Rooney, of Colfax, Placer County, will show the prevalence of diphtheria there:

On the 6th of September, 1878, an epidemic of diphtheria broke out in this place, which has raged intermittently almost up to the present date; the last case I attended being convalescent on the 7th of the present month. The epidemic began and ended with the rainy season; and my observation always confirmed the fact that after every cold rain storm new cases would break out. Colfax is a small place, containing only about six hundred inhabitants. It supports but one medical man, and consequently I have had an opportunity of seeing nearly all the cases that have occurred, having treated all but a small number, having occasional counsel. I have embodied no cases in this report excepting those that have come under my own observation. The others were mild and doubtful, requiring little treatment. During the period mentioned, there have been sixty-two well marked cases of diphtheria in this place, besides numerous sore throats, which, in the absence of real diphtheria, might be classed as such. This is a very large percentage for the number of inhabitants, and, when the virulence of the epidemic is considered, proves that some great cause of propagation exists. Ten deaths have occurred since the outbreak, three of which were cases that received no medical attention until far advanced, and when little could be done. Ten others recovered only after the most unremitting attention and careful nursing. The youngest child having it was eighteen months old. Four adults were attacked by it, two of whom had it twice within a few weeks. One case, a girl thirteen years of age, had the disease three times within six months—twice severely. The first real case of diphtheria in Colfax occurred some three years ago, previous to my coming to the place, and I cannot give any authentic account of it. It came in conjunction with scarlatina, and caused some five or six deaths at that time. It remained quiescent for about eighteen months, when the present epidemic started. It would appear to superficial observation as though the first case of the present outbreak was caused directly by contagion. A young lady had the disease at Reno, and, three weeks after convalescence, came on here. She stopped three days in the house where the first case appeared, and in about three weeks more the youngest child of the family, where she stopped, was attacked. But, from the fact that the disease had been in the place before, and that such a long period had elapsed after the young lady's convalescence, and also before the child took the disease after possible contagion, and that the house where it occurred stood in a favorable location for miasmatic conditions to influence it, the question becomes more obscure. And furthermore, in no other case could direct contagion be traced. To be sure, several members of the same families were attacked, but that proved nothing, as the same local causes which generated the first case were still in existence to promote the disease in subsequent ones. In my own humble opinion, the epidemic was caused by the bad sewerage of the town. Colfax lies in a little valley between the hills, and in summer there is no drainage whatever. The water supply is pure and good, but insufficient to flush the sewers, and the drainage from the

two large hotels and all the private residences runs in uncovered sewers, and in the summer season dries into the earth. Now, supposing the germs of the disease to be already in existence, the advent of the first autumnal rains, followed by warm days, would convert all this dried up sewerage into a festering mass of corruption and disease. The germs of the disease being once liberated, would multiply themselves in a thousand fold, and the question of thorough saturation of the atmosphere with poisonous germs would be a question of a short time. Then, again, after the epidemic had assumed alarming proportions, I caused a public meeting to be held, at which funds were subscribed and resolutions adopted to thoroughly cleanse the town. This was done, and was followed by an immediate abatement of the disease. Then followed a period of cold weather, and snow lay upon the ground for four weeks. Upon the disappearance of the snow, the disease again began its ravages, and only ceased upon the cessation of the rains. Another factor in the propagation of the disease was the fearful condition of Chinatown. All the filth, corruption, and nameless horrors that the mind can conceive were centered here. The Chinese quarters lie at the north end of the town, and the night wind from the mountains sucks the miasma from the higher to the lower grounds, and our people lay unsuspectingly imbibing these noxious vapors during their hours of sleep, whilst the system is in a state of relaxation, and just right to imbibe and assimilate the poison. Still another factor is the existence of a slaughter house in the midst of the town. The stench from this is abominable, and no doubt tends to increase the life of the disease. The water supply of the town is pure and good, and can have nothing to do with the epidemic. The most of it comes from tunnels, which have been run into the mountain back of the town, and is *almost absolutely pure*. The privies and back premises of all the white citizens are in good condition, and have been ever since the public meeting was held.

Dr. C. B. Bates, Santa Barbara :

No. 1—There have been a few sporadic cases during the entire year.

No. 2—A marked diminution.

No. 3—More during the spring and fall than during the summer.

No. 4—No; cases have occurred in all portions of the town.

No. 5—No.

No. 6—The disease first occurred rather more than two years ago, in a family visited by a child who had contracted it in Los Angeles. Since then I cannot say that I have been able directly to trace any of the cases to contagion, although the probabilities are great that many have occurred in this city.

Dr. W. D. Rodgers, Watsonville :

No. 1—To a limited extent.

No. 2—There was much less the past year.

No. 3—August, September, October, and November.

No. 4—The drainage of our town has been defective, and our water (surface) necessarily impure; but we are now supplied with pure water.

No. 5—It has generally prevailed during the dry season.

No. 6—We believe it to be contagious.

Dr. C. A. Kirkpatrick furnishes the following remarks upon diphtheria, as it prevailed in Mayfield, Santa Clara County :

The history of the outbreak and deadly work of diphtheria at Mayfield and vicinity will give, also, a correct illustration of its invasion into the southern part of San Mateo County.

There had been a few cases reported in the months of October and November, 1877, but not at all approaching the character of an epidemic until about the first of January, 1878. Since that date, the first cases of diphtheria in Mayfield occurred in a family living in a house elevated about eighteen inches above the ground, and that space under the house all open, giving free circulation of air—no pent-up sewers with an occasional opening for the escape of the noxious gases generated therein, for there were no sewers there; and before and at the time of the first appearance of the disease the whole valley was overflowed and washed clean by a flood to the depth of from one to two feet, and which did not leave a debris of decaying vegetable or other organic matter.

Under such circumstances the disease made its first appearance, and during the year, up to the 31st of December, when the changes and conditions were of such various characters, the record of its work stands thus :

January—five cases	2 deaths.	June—three cases	2 deaths.
February—seven cases	4 deaths.	August—eleven cases	5 deaths.
March—four cases	3 deaths.	September—seven cases	2 deaths.
April—three cases	1 death.		

Now, in regard to the locality, soil, water, etc., Mayfield is situated in the northern part of Santa Clara County, and about one mile and a half south of the San Francisquita Creek, which is the

boundary line between Santa Clara and San Mateo Counties. It is about three miles from the bay and less than one mile from the foothills to the west. The soil is of three kinds: First, the heavy, black, pure adobe; second, a mixture of a dark, porous, somewhat gravelly soil; and third, a lighter colored gravelly soil. Of the forty cases, nineteen were in the adobe district, but seven of them were brought there from the country, where they had contracted the disease before coming to town; and out of the nineteen but five died; while of the twenty-one attacked in the porous and gravelly district, fourteen died; thus showing a large balance of mortality as occurring in the porous, gravelly localities.

This coincides with my experience at Menlo Park and Woodside, in San Mateo County, while at Redwood City, which is situated in a pure adobe district, and at an elevation of only about two feet above high tide, we have never had an invasion of the disease that could fairly be called epidemic. The soil at Menlo Park bears a general resemblance to that of Mayfield, but the surroundings are very different, in that Mayfield is on an open plain, while Menlo Park is situated in the midst of a forest of white and live oaks, while Woodside nestles among the hills at the foot of the mountains.

Now, if it be not true that the disease is more likely to occur and be more fatal in localities where the soil is loose and gravelly, how can we account for the above facts?

Now, in regard to the water, the sources of supply are so diverse that I do not attach much, if any, importance to that as giving a clue to the origin or propagation of the disease. I have not seen or known of a case in which there was any conclusive evidence that the water used about the premises had anything to do with its development or progress in the most remote manner whatever. The water in Mayfield is derived from two sources—surface wells, as they are called, sunk to the depth of from fifteen to twenty-five feet, and artesian wells, sunk to the depth of one hundred and fifty feet. At Menlo Park, from surface and artesian wells as above, at Mayfield, and also from the reservoir of the Corte Madera water-works. At Woodside the water is obtained from surface wells and from the pure, sparkling rill, as it flows from the mountain side. At Redwood City the water supply is from surface wells, artesian wells, and from a reservoir filled by a mountain spring.

Now, then, referring back to Mayfield as the basis of this report, and reviewing the locality, water supply, ventilation, sewerage, etc., there is nothing, to my mind, to rationally account for the invasion of the disease on accepted theories.

From the responses of correspondents it will be observed that there exists a great diversity of opinion about some of the most important factors in the causation of diphtheria, as it manifested itself in California during the last two years. The answers to Question No. 4 are particularly noticeable, on account of the small number which recognize any connection between this disease and "dampness of locality, defective drainage, imperfect sewerage, impure water, or other insanitary conditions"—only eight out of a total of twenty-four. In one instance no answer is given to this question, in consequence of the absence of any case of diphtheria in the locality represented.

It is not affirmed by those answering in the negative that, in their judgment, diphtheria *never* sustains an intimate relation to some one or more of the conditions referred to—that dampness of soil, of dwelling, of air, never acts as an exciting or even predisposing cause of the disease; that drainage, however imperfect, sewers, however foul and unventilated, water, however impure, and the other surroundings to which the term "insanitary" may be properly applied, are never found so intimately associated with it as to be considered in some manner causative, but that, in the instances coming under their observation, no such relation appeared to exist. Yet, even with this explanation, the fact that the absence of any such connection or relation should have been noted in fourteen out of twenty-four localities, in some of which the disease seems to have raged with fearful violence, appears at first thought somewhat surprising, in view of the weight of medical testimony as expressed in the most recent publications, and in view, especially, of the strong ground taken on this subject by the leading sanitarians of the world. Yet, regarded in another and entirely legitimate light, the opinion expressed is in perfect accord with the view now held by many, that diphtheria is a specific disease, arising from a germ peculiar to itself, multiplying and repro-

ducing itself under favorable circumstances, but seldom or never arising *de novo*. To admit this to be true is no more unreasonable, in fact, than to admit the validity of the same belief as applied to scarlatina or measles. How often do we find outbreaks of these in isolated dwellings, or even in localities remote from those more or less recently affected? And how difficult it is to determine the route it traveled or the method of its stealthy approach. Yet we seldom hear a doubt arise as to the specificity of scarlatina. Though we cannot follow its uncertain steps, or unravel the mystery of its propagation, the fact that it has arisen from a specific germ or principle, or poison, has commonly received our assent. It is a part of our early education in medicine—it is a principle of the orthodox faith. That we do not all admit the force of the same doctrine, as applied to diphtheria, may be because the facts have not been so clearly demonstrated to our observation. There is, indeed, among the closest observers, a difference of opinion as to the causation of this disease, or the possibility of its arising independently of germ propagation, or whether this germ can ever originate *de novo*, even under circumstances supposed to be peculiarly favorable. It must be considered to be, as yet, an unsettled question.

Almost the same difficulty is involved in the question of the contagiousness of diphtheria; and although a large number of our correspondents agree as to the fact, it is difficult, with this as with other diseases similarly classified, to point out the precise source of the contagion, and we are not infrequently compelled to fall back upon the doctrine of the extreme vitality of the poison, its capability of being transmitted long distances by clothing and other tangible objects. Admitting the fact that the observations of the correspondents, in the several localities from which they write, have not been sufficiently demonstrative of the effects of local exciting causes during the past two years, it is believed that few of them would deny the pernicious influence of the factors above named. Some of them are earnest laborers in the sanitation of the districts in which they reside, and recognize to the fullest extent the evils of which the ordinary insanitary conditions are productive. They recognize the fact that disease—zymotic disease especially—is favored everywhere by uncleanness, by dampness of soil and of the dwelling, and by overcrowding; that these exert a depressing influence on the system, lower the resistance to disease, predispose it to the easy receptivity of contagion, and render it less capable of sustaining an attack. There are no facts, indeed, in sanitary medicine more susceptible of proof than that this entire class of diseases find their favorite haunts amid the abodes of wretchedness and filthiness; that though they may in isolated instances, and sometimes even in their more general manifestations, seem to spare neither sex nor age, nor have respect to condition in life, yet they occur with far greater frequency and with increased fatality wherever the sanitary condition is bad, where the pure sunlight is shut out, wherever drainage, ventilation, and cleanliness have been neglected, and that, in proportion as these things are corrected, improvement in health follows and the death rate diminishes.

As bearing an intimate bearing upon the question of causation, attention is invited to the cases reported by Dr. G. L. Simmons, occurring in and near the city of Sacramento. In addition to what

has been stated by Dr. S. in his report, another important fact was mentioned by him to the writer—that the water in the well at the school house, though used by many of the children, was so nauseous that some were in the habit of taking pure water with them from their homes. We have here the two factors of impure air arising from the pig-pens and slaughter-houses, and contagion, and a possible *third*—unwholesome water.

While writing this report, cases of diphtheria have come under the observation of the writer in a family of five persons—father, mother, and three children—living in a small house, in a low, highly malarious portion of the city. Within a distance of perhaps eighty yards of this house runs the *drainage* canal, made for the purpose of conveying away the sewage of the city—an open ditch, five or six feet in width, and of varying depth. The water and sewage in this ditch are now diminishing in depth, exposing the earth upon each side to a process of drying, in the course of which exhalations of an offensive kind are given off. Within a few feet of the house are the privy—a vault four or five feet deep—and a small inclosure for chickens and ducks, exceptionally filthy. Fifteen or twenty feet from the privy is the well, bored to a depth of about twenty-eight feet. The soil about the house is a rich sandy alluvium, beneath which, at a depth of eight or ten feet, is a blue clay hard-pan impermeable by water. The surface around the well—the latter being on the slope at the rear door of the house—gave unmistakable tokens of having been the receptacle of the slops and the washings from the kitchen. Upon inquiry it was learned that the water in this well was not used for drinking purposes, under the impression that it was causative of ague, though it is questionable whether this rule was strictly obeyed by the children. Of this family of five persons, all had severe diphtheria; the mother first, then one of the children, the others following in rapid succession. One nurse, coming from a different part of the city where the disease did not prevail, was taken sick while on duty and compelled to return home, suffering with the same malady. It was stated that none of this family had recently visited other portions of the city, the children were not in attendance upon school, and, to all appearances, no opportunity had been afforded them to contract the disease away from home. It was said, however, that a sister of Mrs. — had visited the family only a day or two before the latter was attacked, bringing with her a little girl who had a *fever* the day previous, and a slight enlargement of the submaxillary glands. Whether this was a mild form of diphtheria cannot be ascertained—no physician having been called and no medicine given. It is at least problematical. What was the etiology of the disease as it appeared in this family? If we deny, as some do, the possibility of the origin of the germ of diphtheria, under conditions such as have been described, we will be compelled to fall back on the theory of contagion, and admit the probability that the little child, who, with its mother, visited the family, really had the disease in a form so mild as to be unrecognized and unsuspected at the time. Yet, against this theory is the fact that only two days elapsed between the exposure and the appearance of the sore throat in Mrs. —. The same doubt might arise as to the origin of the disease in the nurse—whether it arose from contagion or the insanitary surroundings.

From the uncertainty as to the causation of this disease, therefore,

the practical lesson is derived—a lesson which, in the interest of communities and of individuals, cannot be too frequently repeated or too earnestly urged—to avoid its possible sources: by cleanliness of the dwelling and its surroundings, by protection of the water from contamination, by the cleansing and disinfection of privies, by the ventilation of drains where these connect with sewers or cess-pools, and by isolation of the sick. All of these things can be accomplished with little inconvenience and trifling cost.

There is another danger connected with the assembling of children in the school-room. Of this, the cases mentioned by Dr. Simmons are an illustration, teaching us by a sad, yet striking example, the danger of permitting children just recovering from an attack of diphtheria, or belonging to families in which it prevails, to associate in the school-room or at play with others. Such lessons are unfortunately often repeated in the history of diphtheria, yet seldom heeded. It is time that public attention was drawn to this danger, that parents should take the precaution to keep their children at home when one of the family is affected, and that those having authority should close schools in which the disease had made its appearance in a number of its attendants.

CONSUMPTION.

The statistics of consumption are interesting, showing a decided increase in mortality for 1878 over that of 1877. The difference may be, in part, accounted for by the greater number and regularity of the reports received during the former period, but mainly by the greater mortality by this one disease in some of the large cities of the State, notably San Francisco, Marysville, and Los Angeles.

The mortality set down to these and other cities is not so much to be considered a reflection on their local climatic influences, as to the tendency of invalids in all parts of the State to flock to these cities, many seeking charitable aid, medicinal or pecuniary, and, especially, the benefit of hospital care.

The same may be said of the somewhat startling mortality at some of the reputed health resorts of the State, these localities being sought by those desiring the benefit of a favorable climate, but at a stage of disease too late for help.

In connection with this disease, one of the most important subjects for consideration is that of a

STATE HOSPITAL FOR CONSUMPTION.

The necessity for the establishment of such an institution has been long felt. The subject has, on several occasions, been presented to the Legislature of the State and to the public. It is urged as a matter of economy to the citizens of the several counties, who might far better pay their share of a State tax for the purpose than themselves bear the burden of the support of those sick with pulmonary consumption. It is also a great humanitarian scheme. The county hospitals are in general not suited for the care of the class of patients under consideration. They are designed commonly for other diseases, for the treatment of accidents, for the care of paupers, many of them, and for those suffering from a class of chronic maladies for which hygienic treatment is, by comparison, of secondary import-

ance. Their locations are not always such as are best suited to the consumptive; for it is true of California as of other States that the climate of some portions is much more favorable for the purpose than that of others. If we are to have the unfortunate victims of the disease among us, surround them with all the comforts which a liberal government can bestow; give them all the advantages which a State, rich in its natural resources, is able to supply; give them pure air and a home selected especially for its adaptability to their condition, and we shall have fulfilled a duty which the dictates of a higher humanity demand.

The public, it is believed, is generally unaware how many consumptive patients find their way to California in the hope of regaining their health, and how few of these are prepared for the hard struggle for the means of support in a strange land, how they crowd into our large cities, frequent the different health resorts, especially along the coast and in the coast valleys, swelling the lists of mortality there, and reflecting injuriously on their reputations as sanitariums; how they ultimately seek admission into our hospitals on account of failing health or the want of the comforts of life. Doubtless more are driven there by absolute want than is generally supposed, who, if they had the means to pursue a different course, or could avail themselves of the advantages of a suitable hospital, or other sanitarium, in a judiciously selected locality, affording proper hygienic treatment, would ultimately recover and become useful and profitable citizens.

In the emergency in which these sufferers from disease and poverty find themselves placed, they can of course exercise no judgment as to the locality adapted to their condition. They generally seek the large cities—by preference the metropolis—where the climatic conditions are the very reverse of favorable.

John S. Hittell, Esq., a close observer and student of the resources of the State, in an article upon this subject, published in the *Pacific Medical and Surgical Journal*, April, 1879, states some facts which are worthy the attention of our legislators. "A large number of invalids," he says, "come from the interior to the metropolis for the benefits of its medical skill, private charity, and public institutions. About three hundred consumptives, two hundred of them from other counties, are admitted annually into the County Hospital, and the expense to San Francisco of these two hundred phthisical patients from other parts of the State is perhaps \$13,000 a year, enough to provide for six hundred patients of other classes, since the consumptives live longer and cost more on the average than the others. The number of consumptives who die in the course of a year is to those admitted as seven to fifteen, and something of the proportion is to be charged to the unfavorable influence of our climate. * * * * *

"The establishment of a State hospital for consumptives would not only be a matter of benevolence to the invalid and of justice to San Francisco—though the latter is a comparatively small consideration—but also of general benefit to California, which would thus command attention, challenge comparison, stimulate the study of therapeutical climatology throughout the civilized world, and give prominence to the superiority, which I believe she has, as a resort to sufferers with diseases of the respiratory organs over every other part of Christendom."

As an act of justice, then, to the counties of the State, as a humani-

tarian scheme for saving life and relieving the sufferings of the unfortunate, a measure in which the reputation of the State itself is involved, the subject ought, of right, to enlist the warm sympathies of the Legislature.

COUNTY HOSPITALS.

Reports have been received from eighteen hospitals, although every reasonable effort has been made to obtain the statistics of all known to be in existence. From the returns received there is gratifying evidence of an improvement in the condition of these institutions over those recorded in the last report of this Board. The rate of mortality and the number of patients under treatment may be seen by an examination of the tabular statements herewith submitted.

REPORT

To the State Board of Health of the Indigent Sick treated in the following Hospitals.

NAME OF HOSPITAL.	Number of months reported.	Total admitted and in Hospital.	Discharged cured.	Discharged.	Died.	Per cent. of deaths.	Remaining under treatment.	Period included in Report.	Name and residence of Physician.
Sonoma County	12	291	173	42	27	.09	49	January 1, 1878, to December 31, 1878.	James Burns Gordon, M. D., Santa Rosa, California.
Tulare County	3	55	21	26	3	.05	5	January 20, 1879, to April 20, 1879.	Martin Baker, M. D., Santa Rosa, California.
Fresno County	24	143	101	116	13	.08	14	January 1, 1877, to December 31, 1878.	Lewis Leach, M. D., Fresno, California.
Sierra County	12	46	11	18	5	.10	12	November 23, 1876, to November 23, 1877.	George C. Chase, M. D., Downeyville, California.
Sierra County	12	48	18	8	7	.14	15	November 23, 1877, to November 23, 1878.	Alenby Jump, M. D., Downeyville, California.
Shasta County	11	56	22	13	5	.09	16	February 1, 1878, to December 31, 1878.	J. M. Briceand, M. D., Shasta, California.
Del Norte	12	8	5	—	3	.37	—	January 1, 1878, to December 31, 1878.	J. W. Reins and F. Knox, M. D., Crescent City, California.
Central Pacific Railroad Hospital	12	1,921	1,869	13	10	.005	29	January 1, 1878, to December 31, 1878.	A. B. Nixon, M. D., Sacramento, California.
Kern County	12	149	94	117	19	.12	3	February 10, 1878, to February 31, 1879.	L. S. Rogers, M. D., Bakersfield, California.
Placer County	12	202	87	149	23	.11	48	January 1, 1878, to December 31, 1878.	T. M. Todd, M. D., Auburn, California.
California State Woman's Hospital	24	*257	130	97	5	.02	5	January 1, 1877, to December 31, 1878.	John Scott, M. D., San Francisco, California.
Stockton Insane Asylum	12	181	77	91	91	.06	1,174	January 1, 1878, to December 31, 1878.	G. A. Shurtlott, M. D., Stockton, California.
Home of Inebriate	12	861	—	854	7	.01	12	January 1, 1878, to December 31, 1878.	A. P. Hayne, M. D., San Francisco, California.
Calaveras County	12	86	41	52	17	.13	17	January 1, 1878, to December 31, 1878.	E. B. Robertson, M. D., San Andreas, California.
Yolo County	6	43	27	4	4	.09	8	November 1, 1878, to April 30, 1879.	Thomas Ross, M. D., Woodland, California.
Los Angeles	6	193	112	16	21	.10	44	June 30, 1877, to June 30, 1879.	J. Hunton, M. D., Los Angeles, California.
Napa Asylum for Insane	24	1,048	332	293	174	.08	714	December 3, 1877, to December 3, 1878.	E. T. Wilkins, M. D., Napa City, California.
Sacramento County Hospital	12	963	789	56	56	.06	118		G. A. White, M. D., Sacramento, California.

* Out-patients, 798 additional.

TABLE No. 2.

Principal Diseases reported from Hospitals.

NAMES OF HOSPITALS.	DISEASES OF THE RESPIRATORY ORGANS.				FEVERS.					By whom reported.																	
	Consumption	Pneumonia	Bronchitis	Other diseases of respiratory organs, including influenza.	Typhoid	Typho-malarial	Remittent	Intermittent	Cerebro-spinal	Diseases of brain and nervous system	Bright's disease and nephritis	Diseases of the liver	Diarrhoea and dysentery	Other diseases of stomach and bowels	Diphtheria	Heart disease	Aneurism	Erysipelas	Rheumatism	Alcoholism, including delirium tremens	Cancer	Venereal diseases	Other diseases	Accidents	Totals		
Sonoma County	16			17	27					12	13								27	6	12	115	46	191	J. B. Gordon, M. D.		
Tulare County										12	6	1	3	1					14	1	22	13	7	143	Martin Baker, M. D.		
Fresno County	6	5	8	4	1		433			12	4	1											12	5	46	Lewis Leach, M. D.	
Sierra County	3	1		2			41			4	1	1											13	6	48	Geo. C. Chase, M. D.	
Sierra County	3	1		2						10	1		1										14	2	56	Almely-Jump, M. D.	
Shasta County					2		43			6		3		21					10	1	1	2	56			J. M. Bricehand, M. D.	
Del Norte County	1									1									1				1		8	Drs. J. W. Reins and F. Knox.	
Central Pacific Railroad	6	36	4	287	6		481			36	6	4	1	104	2	5			3	153	1		180	267	1921	A. B. Nixon, M. D.	
Kern County	6	11	5		20		44			2	2	1	6	3					33		7		36	12	199	T. M. Todd, M. D.	
Placer County	7	5	6	2	21					21	2	1	6										228		237	John Scott, M. D.	
California State Woman's										2181																G. A. Shurtliff, M. D.	
Stockton Insane Asylum										311									10				25	13	86	E. B. Robertson, M. D.	
Home of Inebriates	3						45			13	2			1				6				4	6	1	43	A. P. Hayne, M. D.	
Calaveras County																										E. B. Robertson, M. D.	
Yolo County	2	4		51	5		6			4																Thos. Ross, M. D.	
Los Angeles County	36	3		12	1		42			33	2			3		1			37			2	11	24	11	178	J. Hamon, M. D.
Napa State Asylum for the Insane	18	4		1	1					76				5										60	4	173	E. T. Wilkins, M. D.
Sacramento County	33	7	12	22	15		50	139		49	8		8	14	1	7		1	39		2	81	155	63	737	G. A. White, M. D.	

* Including typhoid, intermittent, and remittent.

† Not reported.

‡ Remittent and intermittent.

§ The insane are received according to Act of the Legislature, 1876 and detained until examined by the Commissioners of Insanity. In cases of doubt they are returned and detained until all doubt is removed.—A. P. II.

|| One homicide and two suicides.

REPORT

To the State Board of Health of Deaths in the following Hospitals.

NAME OF HOSPITAL.	DISEASES OF RESPIRATORY ORGANS.				FEVERS.																				
	Consumption	Pneumonia	Bronchitis	Other diseases of respiratory organs	Typhoid	Typho-malarial	Remittent	Intermittent	Cerebro-spinal	Disease of brain and nervous system	Bright's Disease and nephritis	Disease of the liver	Diarrhoea and dysentery	Other diseases of stomach and bowels	Diphtheria	Heart disease	Aneurism	Erysipelas	Rheumatism	Alcoholism, including delirium tremens	Cancer	Veneral diseases	Other diseases	Total accidents	Totals
Sonoma County	1			3		2				2									1						1
Tulare County						1																			1
Fresno County	2	1	1		1								1												1
Sierra County				1																					1
Sierra County		1								1															1
Shasta County		1																							1
Del Norte																									1
Central Pacific Railroad Hospital	2			1	2					1	1	1		1											1
Kern County			1			4	1			1	1		1						1						1
Placer County	2	2	2							1															2
California State Woman's Hospital																									1
Stockton Insane Asylum				1		1					3	1	2	2											1
Home of Trichinosis	2									5															1
Calaveras County			1					1																	1
Yolo County	2	1		1																					1
Yolo County	2																								1
Los Angeles	1	1		1						4															1
Sacramento County Hospital	1	1		1	4		2			10		6		1			4					1			2
	14	21		1																					56

* Including typhoid, remittent, and intermittent.

The remarks of the physicians in attendance, made in connection with their statistical reports, will throw some light on the condition of the hospitals and the diseases treated.

Dr. J. B. Gordon, of Sonoma County, says:

You will observe that the death-rate is *high*, and the number of *cancer* cases extraordinary. There have been really *six* deaths from cancer, though I report but *five*, as my record was made up before a post-mortem revealed cancer of the kidney. The great number of fever cases reported is accounted for by a very large number of residents of our county working during harvest time in the Sacramento Valley, and returning home late in the fall with intermittent fever, usually with typhoid tendency. Several cases of *paralysis* are traceable to working in the quicksilver mines of this and adjoining counties; and, last year, I admitted two cases of gangrene of the lungs, directly traceable to that kind of work. * * * Probably one-half of the pulmonary cases are from the lumber mills and logging camps on the coast. The climate of the coast is very bad—immediately upon the coast, during the summer, westerly winds prevail—cold and moist—while a mile or two back where the timber is cut the temperature is from 90° to 100°. You can conceive the effect of such changes upon the laborers, who are employed all day in the heat of the woods, coming down to the coast at night-fall where their boarding-houses are generally situated.

Dr. Martin Baker, of the Hospital in Tulare County, writes as follows:

The County Hospital is located in the northeast portion of Visalia, away from the business portion of the town, upon high ground, which is well drained and set out with shade trees, the eucalyptus interspersed. The building is two stories in height, and is divided into twelve wards, with a fire-place in each. It is capable of accommodating thirty-six patients. The rooms are twelve by sixteen and well ventilated. We have recently added a dead-house on a corner of the grounds, away from the main building, and have built an additional building to the hospital that will accommodate ten more patients. Visalia has facilities for drainage which many cities of the plains might envy. A branch of the Kaweah River runs directly through the city, with banks eight feet high. The pure sparkling water comes directly from the mountains, but fifteen miles distant. This creek is made the receptacle of all the sewers of the city.

Dr. Lewis Leach gives the following account of the Hospital in Fresno County:

The Fresno County Hospital was built upon a block of ground containing three and one-half acres, and said block is four blocks from Court-house. The main building is seventy-five feet in length by twenty-five in breadth, with two wings, each twenty-four by thirty and seventeen feet in height, separated by a hall twelve feet in width. The rear forty-six feet of the main building is used for kitchen, dining-room, and two sleeping rooms. The anterior portion of the main building contains dispensary and one room for general use. The two wards above spoken of are said to contain (builder's estimate) 16,200 cubic feet of air, and would give eight patients per ward over 2,000 feet each. The wards are warmed by fire-places, one in each ward; ventilation from transoms and windows: sewerage good as far as tested. The building has been in use eighteen months. Supplies are the best that the market affords. Water is furnished by the Fresno Water Company, is raised by steam power from a well eighty feet in depth, and conveyed to the hospital in iron pipes. The entire management of the hospital is with the County Physician, who has discretionary power to purchase whatever he may deem necessary for the benefit of his patients. He also furnishes his own medicines, and at the end of each month makes out his bill for medicines furnished and services rendered, which, with all other bills, are placed before the Board of Supervisors, and have always been allowed.

Dr. Alémby Jump, of Sierra County, adds the following to his statistical report:

The building occupied by this county for hospital purposes has been condemned by several grand juries. Ventilation is bad. Water supply and drainage are very good. Sewage goes into the river, upon which the lot borders. The supplies are furnished on contract by the lowest bidder. Medical supplies are purchased by the physician when required. When there are eighteen patients in the house there will be seventy-seven feet of square surface to each.

Dr. J. M. Briceland, of Shasta, says:

Shasta County Hospital is located three-quarters of a mile west of the Town of Shasta, on

elevated ground, affording excellent drainage. Buildings, one story, fourteen feet high, constructed of lumber, and unfinished; divided into seven rooms, dining-room, kitchen, and four rooms for patients, and one for office. Largest room, eighteen feet square. All are well ventilated, with sunny exposure. About one hundred feet west, second building, also frame, and one story high, thirty by eighteen, constituting one large room for six beds. Two hundred feet east is located the steward's residence. The whole is inclosed within about two acres, with shade trees, and supplied with excellent water from deep well. Sewerage good. The hospital is for the comfort and medical aid of indigent sick, without distinction of race, color, sex, or religion.

Dr. L. S. Rogers, of Kern County, explains the percentage of deaths in the hospital under his charge by the statement, that "a number of the patients were so near dead on being carried into the hospital that they did not live an hour; and many others did not live twenty-four hours, or long enough to derive any benefit from treatment. Our building is large enough for our necessities, and as good as our mild climate needs. Water is supplied from a well, and is as good as can be had in this locality."

A visit to this hospital during the present year enables me to add that the building used, though not erected especially for a hospital or arranged according to modern hospital architecture, is well located, the wards ventilated, and each one sufficiently capacious for the probable inmates. Its management seemed to be unexceptionable, though carried on under the contract system.

Of the State Insane Asylum at Stockton, Dr. Shurtleff, the Superintendent, gives the following facts:

Location at Stockton, on rich, level, valley land, about one and one-fourth miles from tule border: fall sufficient for drainage by extending pipes to tule border.

Sewage taken away from buildings in proper pipes supplied with clear water; but it is not taken a sufficient distance, though no sickness has resulted from defective sewerage apparently.

Ventilation good in the principal buildings.

Supplies of food, clothing, and fuel ample.

Medical attendance: Three physicians, who are required to devote their professional services to the Asylum exclusively.

Surface area to each patient: In the best wards of the female department there is a surface area of one hundred and twenty square feet to the patient; but there are two wards in the male department densely crowded, poorly ventilated, and below any reasonable standard of accommodations.

Time occupied, twenty-six years.

Water supply good. The water is of good quality and sufficient quantity. It is raised by steam power to reservoirs of upwards of fifty feet elevation.

Dr. Thomas-Ross writes regarding the Yolo Hospital:

Yolo County Hospital is situated in a five-acre lot, about one-fourth of a mile south of Main Street, Woodland. Is surrounded with shade trees, many of which are eucalypti. The main building is seventy feet long and forty-five feet wide, having a wing on the northeast side thirty-six feet long and thirty-two feet wide, which is divided into a store-room, thirteen feet by eleven and one-half; kitchen, seventeen and one-half feet by eleven and one-half feet; a small ward, thirteen feet by thirteen and one-half feet, containing two beds, and a portion of a dining-room, eighteen and one-half feet by thirteen feet. A hall six feet wide runs back from the main entrance for forty feet. On each side of this hall are two wards. Those on the south side measure twelve feet by thirteen and one-quarter feet, containing two beds, and twenty-eight feet by thirteen and one-quarter feet, with six beds. On this side also is a small bathroom, five feet by seven feet, and a store-room, five feet by six feet. On the north side of the hall are two wards, one thirteen and one-quarter feet by twenty-four feet, containing five beds, the other twenty-one and one-half feet by thirteen and one-quarter feet, containing four beds. The height of the ceiling in all the wards is twelve feet. The whole number of beds is nineteen. At the end of the forty-foot hall is another hall, running at right angles with the former, the dimensions of which are thirty-five feet by ten feet, in the center of which during the winter a stove is placed. Back of this hall is the surgery, thirteen feet by fourteen feet, and the Warden's room, size, thirteen by fourteen feet. A porch, twelve feet wide, is placed on the west end and south side of hospital for its whole length. Three acres are well set in alfalfa, which affords ample feed for the two cows which belong to the hospital. About one acre is used for the cultivation of vegetables. The hospital is ventilated by windows, which slide either up or down

and transoms over the doors. The sewage is conducted to a cess-pool, which is covered, having a flue extending about twelve feet in the air, and is situated fifty feet from the hospital, on the north side. Bids are received by the Board of Supervisors every three months for hospital supplies, and the lowest bid always gets the contract. Good groceries and meats, however, are generally furnished by parties receiving the contract. The physician is appointed by the Board of Supervisors, and holds his position subject to their pleasure. He receives a salary of \$100 per month. He is expected to visit the hospital at least once daily, to supply medicines, and to attend the indigent sick in the county, for a distance of fifteen miles from Woodland. The hospital is supplied with water from the town water-works. This water is pumped from two wells, each of which is two hundred feet deep, eight-inch bore inside, to a tank fifty-five feet high, which has a capacity of 23,000 gallons. This water is good, clear, and soft. The hospital has been occupied for seventeen years, being built in 1862. The surface area to each patient, including all the wards irrespective of partitions, and considering a patient in each of the nineteen beds, is about seventy-four feet—not enough, however. The average of patients in the hospital at one time for the past two years is eight. During the months of May, June, July, and August, the hospital is occasionally crowded to its fullest capacity. Then it is our practice to place beds on the porch on the south side of the hospital, and have convalescents sleep there, thus avoiding overcrowding. Eastmond & Cotier's pneumatic principle or patent, for the ventilation of privies, etc., is applied to all the water-closets.

WOODLAND, May 20th, 1879.

Dr. Wilkins, in connection with his report for the Napa State Asylum for the Insane, gives the following statement of the length of time those dying had remained in the Asylum :

One day	2	Three and a half months	2
Five days	2	Four months	4
Six days	1	Four and a half months	1
Seven days	1	Five months	2
Eight days	2	Six months	3
Ten days	2	Seven months	2
Thirteen days	1	Eight months	2
Fourteen days	1	Nine months	1
Sixteen days	4	Ten months	3
Seventeen days	1	Eleven months	4
Twenty-five days	1	One year and less than two years	12
One month	3	Two years and less than three years	7
One and a half months	2	Three years	2
Two months	5		
Two and a half months	4	Total	89
Three months	11		

With regard to the Napa Insane Asylum, Dr. Wilkins writes:

The Napa State Asylum for the Insane was opened for the reception of patients on the 15th day of November, 1875, though not completed until the present year. It is located in one of the most beautiful valleys in the State, and every view from the hospital is a pleasing picture. The climate is salubrious and pleasant, the temperature equable, being a mean between that of the Sacramento Valley and the Bay of San Francisco, and the statement of the Commissioners, who selected the location, that, "taking all things into consideration, it is confidently believed that no asylum in existence combines more advantages of location than pertains to this," has been fully sustained by the opinion of all visitors of good judgment.

It is situated one and a half miles southeast of Napa City, at an elevation of forty feet above the low lands, affording excellent sewerage facilities, of which advantage has been taken in the construction of the sewers for the Asylum, which faces the west, and consists of a center building with wings extending on either side, and are exactly alike, twelve wards on each side—one wing for males, the other for females. In addition to these there are two large dormitories in the center building, one on the fourth floor and the other in the attic, for forty-four male patients each. The Asylum was designed to accommodate five hundred patients, which was increased to the extent of forty-four patients by furnishing and fitting up the attic. But experience has demonstrated that in these twenty-six wards one hundred additional patients can be accommodated comfortably and safely. It has also demonstrated that the four hundred and fifty-five male patients, now kept in fourteen wards, are more than can be kept with safety, and that under the present pressure proper classification is impossible; as is always the case when two insane persons are confined in a single room or placed upon an open corridor. The ventilation is all that could be desired, and consists of a window in each room communicating with the outside air, transoms over the doors, and a ventilating flue. The water-closets are furnished with downward currents of air through an arrangement of pipes terminating in the smoke-stack of the boiler-house.

The wards are heated by steam, and lighted with gas made upon the place. The water sup-

ply is brought in pipes from mountain streams, and conducted to the tanks in the towers above the roof. It is of good quality, and an abundant quantity for hospital purposes, with several thousand gallons per day for irrigating the grounds.

The surface area was intended to be 1,000 feet to each patient, but two patients in a single room lessen this fifty per cent. The medical staff consists of a Resident Physician and two Assistants.

Supplies are furnished by contract from the lowest responsible bidders, after due notice given by advertising, and are let semi-annually.

With the exception of the occasional prevalence of diarrhoea and colds, the diseases are indicated in the table setting forth the causes of death.

What we most need are two infirmary buildings for the accommodation of, say twenty patients each, as designed in the original plan. Patients suffering from acute physical disease, or prostrated from chronic diseases or any other cause, require different treatment from the ordinary cases to be found in an asylum for the insane. And it is to supply this deficiency and this necessity that these infirmaries are required.

TABLE

Of maximum, minimum, and mean temperatures, and the relative humidity at Napa Insane Asylum, from July 1st, 1878, to June 30th, 1879.

1878.

	July.			August.			September.			October.			November.			December.		
	D. B.	W. B.	R. H.	D. B.	W. B.	R. H.	D. B.	W. B.	R. H.	D. B.	W. B.	R. H.	D. B.	W. B.	R. H.	D. B.	W. B.	R. H.
Max.	89°	70°	35	86°	74°	54.	90°	76°	50.3	82°	70°	52.4	68°	60°	60.1	68°	59°	55.7
Min.	48	50	86.1	48	47	92.5	42	45	77.7	40	42	82.9	34	34	100	26	22	51.5
Mean* ..	64.5	64.5	100	64.5	59.9	77.6	61.6	56.3	71.3	58.8	53.7	69.8	51.5	48.8	85.6	45.	40.4	83.6

1879.

	January.			February.			March.			April.			May.			June.		
	D. B.	W. B.	R. H.	D. B.	W. B.	R. H.	D. B.	W. B.	R. H.	D. B.	W. B.	R. H.	D. B.	W. B.	R. H.	D. B.	W. B.	R. H.
Max.	62°	57°	71.8	67°	60°	64.2	75°	62°	44.1	78°	76°	90.8	80°	74°	74.1	88°	84°	83.9
Min.	29	27	77.5	34	31	71.2	36	36	100	38	42	69.1	38	40	82.9	46	51	68.7
Mean* ..	43.2	41.8	91.4	50.9	48.7	85.6	54.	52.1	93.2	56.6	55.5	93.5	56.9	55.1	93.5	64.8	53.8	43.2

* Mean of all observations.

With regard to the Hospital at Los Angeles, the writer takes pleasure in indorsing, after personal examination of the institution, the following from the pen of Dr. Gibbons, President of the State Board of Health:

It is located about two miles from the heart of the city, in a spot well chosen for drainage, elevation, and surroundings. The house has been recently built, and everything is yet new and unfinished. The grounds contain nearly forty acres, appropriated to a vegetable garden and pasturage for cows, now available, an orchard of fruit trees just planted, and several acres in readiness for an orange orchard. A neat and clean dairy is near the house, and a copious supply of milk and butter is on hand. The laundry, kitchen, and everything else that is required, are conveniently arranged. The water is good and the supply abundant, the water being conveyed in pipes from a short distance. The drainage is natural and perfect.

The building contains eleven wards, capable of accommodating one hundred patients. Many of the inmates are paupers, and nearly all the work of the hospital and farm is done by them and by the convalescent patients. There are, at present, sixty or seventy persons in the wards.

The cost of maintaining the patients, including interest on all investments and expenditures, is forty-five cents a day for each individual, and there is a prospect of some reduction

from this figure. Taking into view everything within and without, I came to the conclusion that, with the completion of the present designs, the Los Angeles County Hospital will be the most complete in the State. It should not be forgotten that the credit is due to members of the medical profession.

Prior to the occupation of the hospital the indigent sick were maintained by contract at an expense of seventy-five cents each per diem, to which the cost of drugs and other things was added, bringing the entire expense up to nearly one dollar.

DESCRIPTION OF THE SACRAMENTO COUNTY HOSPITAL.

This hospital was designed by N. D. Goodell, Architect, of Sacramento, on the pavilion plan. The following description of the building has been kindly furnished by that gentleman:

The hospital consists of six buildings, viz.: one main or central building and five wings, each of the wings standing thirty-two feet from the main building and placed so that their inner ends form a half octagon. The main building is, in size, forty-four feet front by fifty-two feet deep, and in height two stories and mansard roof above basement. The main floor is placed five and a half feet from the ground, thus securing a free circulation of air under the building; the first and second stories are each sixteen feet high in the clear, and the attic story twelve feet. This building has also a tower eleven by eleven feet and twenty feet high, surmounted by a flag-staff, etc. In front of main building is a broad flight of steps leading up to the main entrance, which opens upon a hall ten feet wide extending the whole length of the building. At the rear of this hall is a wide flight of stairs, handsomely finished with black walnut rail and balusters and neat scroll brackets, leading to the second story and attic. The front room in first story to the right on entering the main hall is the parlor; on the left is the operating room, with small bed-room, bath-room, water-closet, etc.; on the left, at the rear, is the library, and on the right the dispensary. The dispensary has been fitted up with neat and convenient fixtures in the shape of counters, shelving, drawers for drugs, sink, etc. The second story is divided into rooms the same size as those in the first story and closets, etc.; there are also six chambers in the attic story. There is also a cross hall, eight feet wide, in both first and second stories of main building, running at right angles with the main hall described above, and leading to an outside door on either side of the building, connecting with the corridors leading to the several ward buildings. On the end towards the main building, and running back on each side of the several ward buildings, are piazzas, eight feet wide, on both first and second stories, making a promenade over two thousand feet in length, and at the same time connecting all the ward building with the main building. There are one or more flights of stairs in each of the ward buildings (seven flights in all) leading from the second story to the ground, thereby giving, in case of fire, ample opportunity to escape from the building. Each of the several wings is twenty-four feet wide and eighty-seven feet long and two stories in height, each story being sixteen feet high in the clear. At the rear end of each ward are three water-closets, two bath-tubs, and four stationary wash stands in each story. The dormitories are each twenty-three by seventy-seven feet, including the nurse's room, twelve by twelve feet, which occupies one corner. Each dormitory will contain eighteen beds, which will give each patient over fourteen hundred cubic feet of air. Four of the ward buildings are exactly alike, as described above. The other wing, which is the center one, situated directly back of the main building, is of the same size and height as the other four, but is arranged somewhat differently. In the first story is a dining-room twenty-three by fifty-six feet, kitchen, sixteen by twenty feet, store-room, pantry, closets, etc., and a back hall and stairs leading to the basement and second story. The basement is finished off into laundry, store-room, etc. The second story is divided into rooms for female patients, with dining-room, china closets, bath-room, wash-basins, linen closets, etc. For the admission of fresh air there are four twelve-inch tin tubes for each ward, laid between the floor joists and leading from the outside to the center of the building; the flow of air is regulated by means of large registers placed in the floor, two tubes leading from each side of the building. For the escape of vitiated air there is a chimney in the center of each ward building, with two large fire-places in each, and in addition to the fire-places are four wooden flues, two on each side of the ward, with two grated openings in each flue—one near the floor, the other near the ceiling. These flues extend up through the roof of the building and are capped with iron cowls, which revolve with the wind, and prevent any sudden drafts down the flues. There are three-inch vent pipes leading from the traps of the several water-closets and coming out through the roof of the building. There is also a wooden flue, eight by twelve inches, leading from the seat of each water-closet throughout the building and terminating with an iron cowl five feet above the peak of the roof. By this contrivance the water-closets, bath, and wash-rooms will be kept free from all impure air. In connection with the ventilation it will be noticed that the shape and arrangement of the buildings is such as to catch and concentrate any breeze that may be stirring, keeping up a circulation of air around the buildings, no matter from what quarter the wind blows. In addition to and independent of the fire-places in the wings and center building, the hospital is heated throughout by the Harvey system of hot water heaters, which produces a very mild and pleasant heat, very different from the dry scorching heat produced by many systems of heating, the furnace, etc., being placed in the basement of the main building, with radiators in each of the several wards, rooms, etc.

WATER SUPPLY.

It was designed, under this heading, to give a somewhat detailed account of the water supply of a considerable number of the cities and towns of California, but the inability to obtain analyses of the water used for household purposes and the failure of some, mainly in the larger cities, to give any response to the communications addressed to them, has rendered the accomplishment of the undertaking impracticable for the present. Much valuable information has been obtained, however, from the replies of other correspondents to the questions sent to them, affording at least a partial idea of the resources of the State in this connection.

The importance of this subject requires no argument to demonstrate. It is one of those things with which the public, no less than the professional mind, has been of late years considerably occupied, and yet one which, in view of the magnitude of the interests involved, can not be too closely considered. Yet, there is a wide-spread carelessness observable even now among intelligent citizens in regard to sanitary matters generally, and in none more than in that which relates to the water used for domestic purposes.

The sources of a water supply in general may be considered to be wells, shallow or deep, lakes, springs, rivers, and the rain. Each of these has its advantages and disadvantages. The wells are liable to contamination by surface water and by percolation through a soil overcharged with the contents of drains, cess-pools, or privy vaults; the rivers are often polluted by washings from the neighboring lands, and by impure material drained or emptied into them by residents along the banks; the springs, even though pure at their sources, by impurities received by the water *in transitu* or in the reservoirs for storage and distribution, not to speak of the danger from chemical action upon lead and other pipes; and the rain or cistern water, by the dust and organic matters accumulating on the roofs of houses or in the gutters leading therefrom.

These sources of supply are not all of them equally available, however, at all times. In some of the valley towns in the interior of California, wells, for instance, constitute the only resource. A majority of these are shallow, twenty-five to thirty-five feet or less; the water, many times clear, colorless, but hard and alkaline. No analysis has been made of the well water of any locality so far as the information of the writer extends; but this hardness is believed to be universally of that kind considered temporary, i. e., removable by boiling. It is frequently surface water, purified from organic matter by percolation through the soil. With those accustomed to the use of other water, it is apt to occasion intestinal disturbance. Apart from these objections and inconveniences, which are sufficient to induce cities and towns, favorably located for the purpose, to obtain their supply from other sources, there is everywhere, where closely built towns have sprung up, danger of pollution from proximity to privies and cess-pools, where there are any. The latter, however, partly on account of the slight depth required to reach water, have commonly been discarded for the more primitive custom of emptying the slops and refuse of the house and kitchen upon the surface near the rear door, whence it gradually trickles down toward the well, or is imperfectly drained away to a more distant part of the yard, in either case serving to surcharge the soil with organic matters prone to decomposition.

The topography of many of these towns is such that sewerage is impracticable, and drainage difficult and expensive. The former might, however, be very much improved, at small cost, by building, under the direction of the town authorities or of the Board of Health, a sufficient number of perfectly water-tight cess-pools, care being taken that they be sufficiently small to require at least a semi-annual cleansing. The contents might be utilized on the neighboring ranches. If the drains leading into these cess-pools were properly trapped and ventilated, there would be the least possible danger of water contamination from this source. If, in addition, the privies were built in the same manner, completely water-tight, emptied once or twice a year, and suitably ventilated, the danger would seem to be in a great measure obviated. The facility with which vaults and cess-pools are now cleansed by the odorless excavator renders the plan suggested comparatively inexpensive. Cess-pools, however, are only to be tolerated from necessity. Insecure cementing, defective traps, and imperfect ventilation render them more or less liable to do harm. Other methods of disposing of sewage will be spoken of in another place. Some of the valley towns, suitably located, have adopted the plan of deeply bored wells or artesian wells, thus avoiding many of the dangers to which shallow wells are subject. Such is the case, to some extent, in the Santa Clara Valley and in the City of San José, which contains numerous artesian wells from fifty to three hundred feet deep; at Stockton, in the San Joaquin Valley, where water is obtained at a depth of twelve hundred and two feet; at Bakersfield, and Visalia in part, Kern River supplying the former place with the greater portion of its water; at San Bernardino, the usual depth being one hundred and twenty feet; at Woodland, and some other towns. The water thus obtained is usually clear, tasteless, and, apparently, of good quality.

Other valley towns, located within a reasonable distance of the mountains, seek to obtain their household water from springs, in the latter, bringing it in by ditches and pipes, and collecting it in reservoirs for distribution. Red Bluff is one example among several, the supply being of excellent quality. The principal danger to which such water is exposed, provided it be pure at its source, lies between the latter and the reservoir. Open ditches or conduits are liable to be variously contaminated—by surface washings from the soil, by the leaves and branches of trees, by roaming cattle, and by mineral matters from cultivated land. Springs, when distant from the point of supply, are equally, or almost equally, subject to contamination with rivers, upon which a large class of our population rely for household purposes. Of the rivers thus utilized the Sacramento may be considered the type. This stream, commencing in the northern portion of the State, pursues a southerly direction for a distance of about three hundred miles, and empties into Suisun Bay about sixty miles below Sacramento, the Capital of the State. During its course, besides several minor settlements above and below Sacramento, it passes by the once flourishing town of Shasta, by Red Bluff, with its increasing population, Princeton, Colusa, Knight's Landing, and Fremont. The latter is about twenty-five miles above Sacramento, near the junction of this river with the Feather River, which, loaded with the debris of mines, gives to the Sacramento the opaque muddy appearance so generally objected to by strangers visiting the Capital. Above the junction of the Feather the Sacramento, except during the rainy

season, is nearly clear. The character of this suspended sediment will be seen hereafter. Though unsightly and objectionable, or even repulsive to those accustomed to the use of clear water, there has been no evidence adduced to excite serious suspicion of its unwholesomeness. Filtered, as is now done by many private families, the water of the Sacramento seems to answer all the sensible tests of purity, being clear, tasteless, soft, and odorless even upon standing. Rarely, during extremely low water, it has been observed to lose this latter characteristic upon exposure in a vessel over night. Instead of filtering the water, many accomplish the same purpose by the use of alum, which, unless added in excess, as it frequently is, does not appear to affect its sensible qualities or render it objectionable in a sanitary point of view. Even a very small proportion of alum is sufficient—from some experiments made, not more than five or six grains to the gallon. Indeed, it is questionable whether the alum, besides precipitating the suspended sediment, does not act, in some degree, upon the organic matters in solution.

The rationale of the action of the alum upon the sediment in the water is simple—the formation of the sulphate of lime, and of a hydrate of alumina, which carries down with it the floating impurities.

The question of the pollution of streams becomes an important one in the consideration of the adaptability of the water of the Sacramento River to domestic use. There is a State law designed for the protection of all our rivers, but it is well known to be so constantly violated as to be practically inoperative. Indeed, laws which require for their observance some sacrifice of personal convenience, especially when nothing more serious than health or life are concerned, are seldom capable of fully satisfying the cravings of human selfishness, or of commanding general obedience. It is more convenient for the towns along the river to drain their sewage into it than to seek other and more expensive and sometimes almost impracticable methods in a different direction. It is more convenient for persons with families residing along the river banks to erect privies in such a manner that the fecal discharges are deposited directly into the water, and to drain off the sewage from the houses, stables, and pig-pens into the stream—and so these things are done.

To effectively prevent the continuance of these pernicious practices would require extraordinary measures—scarcely less than the establishment of a sanitary cordon along the line of the Sacramento River, from Sacramento to Red Bluff. In view of these facts, showing very evidently the pollution, to some extent, of the water of the Sacramento River at different points along its course, the interesting question arises—a question of practical importance to all residing along its banks and using its water for domestic purposes—is this water deleterious, or such as may become so under favoring circumstances?

It must be remembered that river water may contain a certain amount of sewage and yet respond favorably to all physical tests of good water; it may even contain a quantity in excess of what is considered by the highest authorities to be compatible with safety, and be used from year to year with impunity, until, upon the outbreak of an epidemic, as of typhoid fever or cholera or dysentery, its presence is made known by fearful demonstrations of fatality. Those who drink it may escape for a time; but their situation is like that of those who live upon a mine, which needs only the application of a

match to explode. There is danger in it, and we have no right to conclude from the apparent innocuousness of a given water, as exemplified by those who habitually use it, that it is of standard purity. Custom may habituate the stomach to the most extraordinary resistance to morbid impressions; and the intimate admixture of even the foulest sewage with a sufficient quantity of water—estimated at one hundred times its volume—has been thought to render it safely potable in the quantities commonly used by individuals. The greater the dilution, the less the danger. All water, as discovered in nature, especially all river water, is more or less impure, and the measure of its adaptability to use is that of the comparison of volumes.

One of the most interesting questions involved in this subject is that of the self-purification of running water; yet, it is one about which the highest authorities differ. The English Rivers-Pollution Commission are emphatic in the denial of any such purification, at least to an appreciable extent. The result of all the examinations made by this learned commission is thus summed up: "We are led in each case to the inevitable conclusion, that the oxidation of the organic matter in sewage proceeds with extreme slowness, even when the sewage is mixed with a large body of unpolluted water, and that it is impossible to say how far such water must flow before the sewage matter becomes thoroughly oxidized. It will be safe to infer, however, from the above results, that there is no river in the United Kingdom long enough to effect the destruction of sewage by oxidation." The experiments of the commission were made upon the Thames and other rivers of England.

The Massachusetts reports upon this subject agree substantially with those of the English Commission. "It was long thought," they say (State Board of Health Report, 1876), "that sewage was destroyed by running water, but now it is believed by chemists to be all but indestructible there, and to be rendered insensible, as already said, and inert, only by being mixed largely—thoroughly diluted, in other words—with at least one hundred times its volume of good water."

The influence of dilution has been before referred to. It is of great importance, and to its conservative agency is thought to be due the exemption from severe epidemic disease of several of the large cities of the United States using river water.

The reports of correspondents will serve to throw additional light upon the water resources of the State, as well as to illustrate some of the facts mentioned in the preceding remarks. They embrace nineteen cities and towns, and contain answers to some or all of the following questions:

1. From what source does your town or city obtain its water supply for domestic use?
2. If from lakes or mountain streams, by what means is it conveyed from its source?
3. Is the lake or stream from which your supply is obtained liable to contamination from sewage or otherwise?
4. Is the water liable to contamination between its source and the town or city?
5. Has there been any evidence of disease from this source?
6. If the supply is from wells, what is their usual depth?
7. Is there any reason to suspect the contamination of the wells by proximity to privies, cess-pools, or drains?
8. If the supply is from rivers, are these rivers used to receive the sewage of your own town or city, or of other towns? If so, please state facts as far as they are known to you.
9. Is the water supplied for use considered to be of good quality? Is it clear, tasteless, hard, or soft?
10. Has any reliable analysis been made of it? If so, please state the results.
11. Is the supply abundant?
12. Is the town or city supplied by public works or by private enterprise?

To these questions replies have been received from 23 localities, which, without being repeated in full, may be summed up as follows, viz.:

Question No. 1—Supplied by wells, 5; by wells and rivers, 4; by wells and lakes, 1; by wells and springs, 5; by wells and mountain streams, 3; by wells and rain-water collected in cisterns, 1; by shallow and artesian wells, 1; by artesian wells and lakes, 1; by mountain springs and streams, 1. In most of the above, the wells are used to supplement the supply from rivers, mountain springs or streams, and lakes, or are resorted to in the outskirts of towns to which the water from the latter has not yet been extended.

No. 2—By iron pipes, 5; by open ditches and iron pipes, 3; by iron and lead pipes, 1; by open ditch, 1; by wooden pipe, 1.

No. 3—One answers yes; one, yes, for a portion of the supply; eight say no. One of the latter excepting the possibility of contamination by vegetation growing and decaying at the source of supply.

No. 4—Yes, 1; yes, one for a portion of the supply; no, 13—two of these, alluding to the possibility of contamination by falling leaves and other vegetable substances, and one to cattle having access to the ditch in which the water is conveyed.

No. 6—Depth of wells from 5 to 20 feet in 4 localities; 20 to 40 feet in 6; 40 to 50 feet in 1; 100 to 120 feet in 1; 1,002 feet in 1; 12 to 100 feet in 1; 25 to 150 feet in 3; and 50 to 300 feet in 3. The deep wells are artesian, as at San José, San Bernardino, Stockton, Visalia, and Bakersfield. At San José, Dr. J. Bradford Cox states that nine of the artesian wells are owned by the San José Water Company, "the water being pumped from them into tanks by steam engines; these wells are from 50 to 300 feet deep." No statement of the number of artesian wells at San Bernardino is given. Their usual depth is stated by Dr. W. R. Fox to be 120 feet. The supply of water is abundant and of good quality, though somewhat hard, as shown by the soap test. The artesian well from which the city is mainly supplied, the depth of which is given as 1,002 feet, is located at Stockton. The water is considered to be of good quality. Other wells are from 18 to 100 feet in depth.

No. 7—Nine answer yes—one, excepting the water from surface wells; ten reply no, modified in two instances by the adjective *slight*.

No. 8—Question answered by one correspondent, who says "no, except by accident," and by two, who say "there is no sewerage."

No. 9—Twenty answer "good;" one, "fair;" one qualifies the answer by adding "partly;" twenty-one report "clear water, except during the rainy season;" fourteen say "tasteless;" four, "generally so;" one, "not entirely;" one, "except during a short time in summer, when it has the taste of sulphuretted hydrogen"—referring to lake water; three answer "no;" five report the water as being "hard;" two, "wells hard and springs soft;" two, "hard in wells and soft in ditches"—from mountain sources; one, "some hard and some soft"—referring to different sources of supply; four, "moderately hard;" one, "hard, but different in different wells;" one, "somewhat hard, but not *permanently* hard"—Q. C. Smith, Cloverdale; five, "soft."

No. 10—"No analysis," 22.

No. 11—"Yes," 22; "no," 1.

No. 12—Private, 18; mixed, 5.

Of the water facilities at San José, Dr. Cox states that "the supply is said to be abundant at its source, but, owing to the small size of pipe leading into the distributing reservoir, that furnished the city is not abundant. This defect will probably be soon remedied. It is supplied by the San José Water Company. The agent informed me that about 2,000,000 gallons per day were used. Much of this is used for irrigating private gardens, lawns, parks, and for watering the streets in summer. The Alameda is kept sprinkled during the greater part of the year. This extends from San José to Santa Clara, a distance of about four miles. Santa Clara, containing about 2,000 inhabitants, is also supplied by the same works."

Other sources of water for this city consist of three small lakes, and the Los Gatos Creek, in the Santa Cruz Mountains. About ten per cent. of the population use water from surface wells, the latter being suspected of contamination from proximity to privies and cess-pools.

Of the supply of water at Cloverdale, as furnished by the mountain springs, Dr. Smith states the "supposed" chemical constituents to be carbonate of magnesia and borate of magnesia and soda, with a trace of iron.

The only mountain towns heard from are Downieville, Sierra County; Placerville, El Dorado County; and Cedarville, Modoc County. The former is supplied altogether from water from mountain streams and a creek; it is said, by Dr. Jump, to be "uncontaminated, clear, tasteless, and soft."

Placerville derives its supply from springs, supplemented by wells from 5 to 30 feet deep. "Small mountain rivulets and wells about 20 to 30 feet deep afford water for Cedarville." That from the former reaches the town through irrigating ditches, where, in the opinion of Dr. Patterson, "it is contaminated in passing corrals and gardens. Cases of remittent fever, tending to typhoid, occur in families using water from ditches, and from wells into which those ditches may drain." He thinks there is good reason to believe that some of the wells are polluted by proximity to privies, cess-pools, or drains. "In several families," he adds, "remittent fever, terminating in typhoid, has attacked all or many of the members thereof; and, in every instance, I have been able to see possible contamination of the water supply. In some cases the attacks could be traced almost positively to impure water."

Of towns located on the Sacramento River, Colusa is the only one reported to obtain its supply mainly from this source, through the aid of private water-works, though, in portions of the town, wells, varying in depth from 15 to 70 feet, are used. The Secretary of the local Board of Health thinks there is good reason to suspect contamination of the latter. For reasons mentioned in a previous part of this paper, the river water ought to be less liable to pollution than lower down the Sacramento.

Red Bluff derives most of its water, for drinking purposes, from Antelope Creek, which rises in the foot-hills of the Sierra Nevada Mountains. The water is brought in in iron pipes. The County Surveyor informs me that a much better water might have been obtained by pumping from the river, which at that point is clear.

In Woodland, whose water supply is obtained from wells, shallow and deep, Dr. Ross informs me there is no drainage. Cess-pools and privies are universally used. None of these are water-tight, and the soil is of a character favorable to the percolation of their contents

into the private wells. He thinks there is reason to believe that this sometimes occurs. The soil is alluvial, from 5 to 8 feet in depth; then, a loose porous sand; then, gravel; then, blue clay, impervious to water; then, a hard-pan. The wells are commonly bored until the gravel is reached. They are often only a short distance from the cess-pool or privy. The principal supply of the town, however, is from deep wells containing good water.

The greater portion of the water used by the citizens of Marysville is supplied by two bored wells, one said to be 176 feet in depth and the other 226 feet—under the direction of a private company. The water is clear, tasteless, moderately soft, and of good quality. It is pumped into a reservoir and distributed by pipes. The supply is abundant for domestic purposes, including irrigation. The neighboring city—Yuba City—receives its supply from the same source. Only in the suburbs of Marysville, where private surface wells are used, have the evidences of contamination of the water supply been observed.

Dr. W. E. Hook furnishes the following to the questions concerning the water supply of Oakland :

- No. 1—Oakland receives its water supply from wells and from an artificial lake.
- No. 2—The water is conveyed from the lake to the city by means of an iron pipe.
- No. 3—The lake is not liable to contamination by sewage but by substances washed into it during the winter season.
- No. 4—The water is not liable to contamination between its source and the city.
- No. 6—Usual depth of the wells about 40 feet.
- No. 7—There are no reasons to suspect contamination of wells by proximity to privies, etc.
- No. 8—The supply is not from rivers.
- No. 9—The water supply is considered of good quality. It is not tasteless; it is soft; it is clear, except in winter.
- No. 10—There has been no reliable analysis made.
- No. 11—The water supply is quite abundant.
- No. 12—Oakland is supplied with water by private enterprise.

THE WATER SUPPLY OF SACRAMENTO.

This being one of the principal cities, and the Capital of the State, justifies a closer inquiry into its water supply. This is especially called for in view of the frequent agitation of the subject, and the wide differences of opinion expressed.

In pursuance of a design to procure reliable analyses of the water supply of some of the principal cities of California, samples of the water of the Sacramento River were placed in the hands of a chemist, whose analysis is herewith given. The work was performed by Mr. Walter B. Jones, of Berkeley, a gentleman recommended by Professors Rising and Hilgard of the State University. The work was performed under the supervision of Professor Rising.

The sample of water marked No. 1 was taken, at a moderately low stage of the river, in September, directly from one of the supply pipes in the city; samples Nos. 2 and 3 were obtained by Professor Rising, the former near the junction of the Feather River with the Sacramento, and the other above Knight's Landing.

PART I.

Synoptical Report of a Chemical Analysis of the Potable Water of Sacramento City, California, by Walter B. Jones, at University Laboratory, 1878-'79.

Solution obtained = 316.3047 grammes.

Insoluble portion of residue = 3.0028 grammes.

The water as received was filtered, and then the almost clear water evaporated = 36.284.64 grammes. Total solid residue 4.32 grammes.

Aliquot parts—Grammes.	Precipitate weighed—	Weight.	Given to total acid residue.	Weight.	Equivalent—Relative weights.	Multiplied by quantities—Relative weights.	Total—Acids and bases.	Difference.
I. 36.0797	AgCl	0.16653	Cl	0.16653	0.004294 × 1	0.004294	Acids.	0.024093
II. 42.8402	BaSO ₄	0.16653	CO ₂	0.16653	0.007755 × 2	0.015510		
	Mn ₂ O ₃	0.00250	SO ₄	0.21010	0.002180 × 2	0.004360		
III. 42.8402	(KClO ₃) ₂ Cl ₂	0.00250	Mn	0.00250	0.000525 × 2	0.001050	Bases.	0.014787
	NaCl	0.00250	K	0.00250	0.010517 × 1	0.010517		
IV. 42.8402	Reserve and qualitative analysis	0.00250	Na	0.00250	0.003072 × 1	0.003072		
I. 1.0247	CuO	0.23030	Cs	0.23022	0.011150 × 2	0.022300	Bases.	0.041116
	Al ₂ O ₃	0.01165	Al	0.02966	0.000710 × 2	0.001420		
	Mg ₂ P ₂ O ₇ (for Mg)	0.23030	Fe	0.01767	0.003094 × 2	0.006188		
	Fe ₂ O ₃	0.10000	Pb	0.29144	0.007804 × 2	0.015608		
	Mg ₂ P ₂ O ₇ (for Fe)	0.11000	CO ₂	0.41934	0.006337 × 2	0.012674		
II. 1.0248	BaO	0.23045	HClO ₄	1.11610	0.014601 × 1	0.014601	Acids.	0.049179
	BaSO ₄	0.14426	SO ₂	0.11721	0.001843 × 2	0.003686		
III. 0.0118	Qualitative analysis							
	CO ₂	0.17450	CO ₂	0.37013	0.012267 × 2	0.024534		
	Reserve			3.22738				0.012945

Water Analysis—Special Determinations.

Combined as salts.	Absolute weight in total solid residue.	Parts in 100,000 of water.	Grammes per litre.	Grales per gallon.	Suspended matter—(clay, etc., filtered off before analysis).
Manganese carbonate (MnO, 2CO ₂)	0.07381	0.20912	0.002091	0.18249	Grammes per litre..... 0.2332
Sodium carbonate (Na ₂ O, 2CO ₂)	0.23060	0.65193	0.006519	0.37076	Parts in 100,000 of water..... 23.2383
Potassium carbonate (K ₂ O, 2CO ₂)	0.23401	0.65449	0.006545	0.37076	Grams per gallon..... 14.8216
Potassium sulphate (K ₂ SO ₄)	0.39124	1.08020	0.010802	0.59092	
Potassium chloride (KCl)	0.30620	0.86373	0.008637	0.50092	
	1.21538				
Ferrous carbonate (FeO, 2CO ₂)	0.44475	1.23117	0.012311	0.73261	Qualitative analysis of the suspended matter of sediment.
Magnesium carbonate (MgO, 2CO ₂)	0.23254	0.65585	0.006558	0.37076	Oxide of aluminum (Al ₂ O ₃).
Calcic carbonate (CaO, 2CO ₂)	0.26744	0.75777	0.007577	0.42483	Oxide of iron (Fe ₂ O ₃).
Calcic phosphate (Ca ₃ (PO ₄) ₂)	0.00173	0.00483	0.000483	0.00268	Lime (CaO).
Calcic sulphate (CaSO ₄)	0.23175	0.65128	0.006512	0.37076	Copper—traces, (Cu).
Oxide of aluminum (Al ₂ O ₃)	0.04474	0.12047	0.001204	0.06724	Sulphates (H ₂ SO ₄).
Silica (SiO ₂)	1.11610	3.10229	0.031022	1.84724	Phosphates (H ₃ PO ₄).
	3.21284				Silica (SiO ₂).
	1.21538				
Total weight of solid matter	4.46632				Total grains per gallon = 7.33875
	4.32000				Estimated grains per gallon..... 7.15611
	0.14632				0.24564

Sample No. 1.—Water taken from Sacramento City Hydrants.				Sample No. 2.—Water taken from the neighbourhood of Sacramento and Feather Rivers.				Sample No. 3.—Water taken from Slough, near Knight's Landing.			
Solubility estimated.	Amount of water used in the test.	Grales per gallon.	Grammes per litre.	Parts in 100,000 of water.	Grales per gallon (water).	Grammes per litre.	Parts in 100,000 of water.	Grales per gallon (water).	Grammes per litre.	Parts in 100,000 of water.	Remarks.
Ammonia (NH ₃)	1000 c.c.	0.004918	0.004918	0.004918	0.005504	0.005504	0.005504	0.005504	0.005504	0.005504	0.005504
Aluminium ammonia	1000 c.c.	0.005551	0.005551	0.005551	0.005551	0.005551	0.005551	0.005551	0.005551	0.005551	0.005551
Nitrate, as nitric acid (HNO ₃)	1000 c.c.	0.110237	0.011023	0.110237	0.110402	0.011040	0.110402	0.011040	0.011040	0.011040	0.011040
Analysis of the Air of Room occupied in the water, above—(Sample No. 1).											
Constituent.				Percentage ratio per 100.				Parts in 100,000 of water.			
Gas in 1146 c.c. K ₂ O = 36.3 c.c.				—				4747.10			
Of which oxygen =				—				18.85			
Nitrogen =				—				71.27			
Carbonic acid ..				—				8.85			
								100.00			

* See written report.



In connection with the analysis, Mr. Jones has briefly submitted his conclusions as follows:

I.—THE SACRAMENTO WATER.

The samples of water were filtered as thoroughly as possible, through pure filter-paper, and the residue determined and analyzed qualitatively. The filtered water evaporated to dryness and the solid contents or residue after evaporation was subjected to careful quantitative investigation. The results of this investigation are given in Part I of the tabular report. The only way in which we can form an opinion as to the quality of the water from this portion of the analysis would be by the presence or absence of metallic poisons; none of these being found we may, after discussing the amount of solid matter per gallon, dismiss this portion of the analysis. Ten grains per gallon has been placed as a limit for a good soft water. In the case under consideration we find but 7.15 grains per gallon.

Let us now turn our attention to the special determinations of ammonia, albuminoid ammonia, nitric acid, upon which we may assume certain opinions in regard to the sanitary condition of the water.

Nitrates: "Presence or abundance of nitrates does not necessarily show defilement by means of sewage, and deficiency of nitrates does not show absence of defilement. And we do not look upon the presence of considerable quantities of nitrates in water as any bar to its domestic use." (Wanklyn & Chapman.) The amount of nitrates (calculated in terms of nitric acid) found does not differ materially in the three samples, and is but very slight in all of them.

Ammonia and albuminoid ammonia: The quantities found of each of these is very small. The tests were made with every possible precaution against the presence of free ammonia in the air of the laboratory, and may be relied on as being accurate as far as the quantity is concerned; but whether this ammonia is a correct standard by which to judge of the contamination of water seems to be an unsettled question. Certain it is that undue quantities of ammonia and albuminoid ammonia indicate the presence of decomposing animal organic matter; but can any one say with exactitude where the limit shall be which shall determine a water absolutely bad. Thorpe, one of the English Commissioners, says: "River waters may be said to contain on the average about 0.01 part in 100,000 parts of liquid, although this amount is subject to great variation. Bad well waters sometimes contain as much as 0.5 to 1 part in 100,000 parts." Wanklyn & Chapman (English investigators) say, all drinking waters may reasonably be required to be of such a degree of purity as not to yield more than 0.08 milligrammes of albuminoid ammonia per litre of water, while other authorities put the limit at still different figures. Now, in the case in hand, we may be assured of correctness in assuming the opinion that the amount of ammonia, etc., found to be present in the Sacramento water is too small to indicate contamination, and, aside from the suspended clay, etc., in the water, we can pronounce it as a good water for domestic purposes.

The amount of sediment in the Sacramento River water varies with the season. In the winter, or rainy season, and until late in the spring, it is in large quantity, giving the water a decidedly muddy appearance; at the time the sample for analysis was taken there was, probably, as little sediment as is ever of late years observed at this point. The water is supplied by the city authorities by means of two pumps: one, the Holly pump, having a capacity of 3,000,000 gallons per diem, and the other, known as the Stevens pump, designed by and made under the direction of A. J. Stevens, General Master Mechanic for the Central Pacific Railroad and its branches, possessing a capacity of 6,000,000 gallons. The former is run during the night, the latter during the day, when the demand for household purposes and irrigation is greater. At the present time, the supply is about 3,000,000 gallons per diem of twenty-four hours. It is a disputed question whether the water used in Sacramento does not come, to a great extent, from the American River, which empties into the Sacramento a short distance from the city. Probably a considerable portion does so reach us at all seasons; and it may become a question of serious importance, in view of the possible future contamination of that river. The latter, during low water, is narrow, shallow, and sluggish, and is less favorable for purifying such sewage as is likely to be discharged into it, or even rendering it innocuous by *dilution* than is the Sacramento River.

In view of these facts, and the many sources of contamination to

which both these rivers are, and doubtless will continue to be, liable, the problem of a different water supply has for some time engaged the attention of many citizens.

Apart from the danger from contamination there is a natural sense or instinct which revolts against the drinking of muddy water, and which is commonly manifested by emphatic demonstrations of disgust by strangers coming to the city.

To remedy this, it has been proposed to sink a basin in or near the old bed of the river down to the gravelly bottom of the bed, and thus to procure pure water by percolation. It is claimed that an inexhaustible supply can be obtained, and that it will be clear, pure, and sparkling.

The advantages to be gained by a supply of clear water, if pure, are certainly such as to commend the project to the serious attention of the city authorities. At all events, the experiment should be tried upon a small scale, and the character and amount of water capable of being supplied ascertained.

Since writing the above, a partial test has been made by boring down to what is believed to be the old bed of the American River, with the view of determining the quality of the water rather than the extent of the supply. The following strata were penetrated in the order mentioned: Light colored river mud, six feet; blue mud, eight feet; quicksand, forty feet; gravel and coarse pebbles, three feet; total, fifty-seven feet, or, adding twelve feet, being the distance of the river bed at the point where the bore was commenced below the level of the natural banks, 69 feet. The water from the "blue mud" was offensive to both taste and smell; that, however, down in the "gravel and pebbles," was selected for analysis.

The following is the result of the analysis, as determined by Professor Henry G. Hanks:

The water contained a yellowish sediment, which settled upon being allowed to stand for a time undisturbed. This being mechanical, it was filtered off, and the analysis made from the filtered water. The water, rendered perfectly clear by filtration, still retained a pale straw color and slight peaty taste. In its natural state it seemed to be neutral, or only slightly alkaline; but on being concentrated by evaporation, gave a strong alkaline reaction. A careful microscopical examination revealed the fact that the water teemed with lower forms of life—animal and vegetable—peculiar to bad water, while none of the higher forms were found. Lime water gave a precipitate, showing that free carbonic acid was present. The total carbonic acid present was found to be 15.73 parts in 100,000. A portion boiled down to one-half let fall a precipitate held in solution as bicarbonates. This precipitate was found to consist of lime, iron, and carbonic acid, with traces of magnesia. The filtrate contained lime, sodium, magnesia, iron, chlorine, and organic matter.

A sample was treated by Wanklyn & Chapman's method to estimate organic matter, which gave the following result: free ammonia, 0.250 parts in 100,000; albuminoid matter, estimated as ammonia, parts in 100,000, 0.130.

The hardness was estimated in another portion, which resulted as follows: total hardness, 16.43 parts of carbonate of lime in 100,000, or, 11.50 grains in a gallon. The water becomes remarkably soft on boiling, the permanent hardness being equivalent to 1.96 parts of carbonate of lime in 100,000, or 1.36 grains per gallon. In making the soap test no curdy precipitate, indicating the presence of considerable quantities of magnesia, was produced.

The total solids in the water were estimated and found to be—parts in 100,000, 28.67; grains in a wine gallon, 16.119, and grains in an imperial gallon, 20.069.

A portion of the water was tested for chlorine, and the quantity determined. It was found to be—parts in 100,000, 1.06.

My examination of this water shows it to be decidedly bad, and unfit for use as an article of food in its present state; yet it is not so bad as it would appear from the analysis, for it is well known that there are mineral springs in California, the waters of which contain ammoniacal salts, and which naturally find their way into the rivers. This, in my opinion, accounts for the large amount of ammonia in the water you sent me; but there is no doubt as to the unusual quantity of albuminoid matter held in solution and the living organic matter present being highly objectionable.

While the water is unfit for domestic use, for manufacturing purposes and for use in steam

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boilers it is well adapted, being free from sulphate of lime and other substances having a tendency to deposit an incrustation; although, if highly concentrated, it would be likely to foam in steam boilers.

[SEAL.]

HENRY G. HANKS.

It is very evident from the above, therefore, that if the City of Sacramento is to seek a different water supply, it must seek it in a different direction than that proposed.

Comparing the results with those obtained from an analysis of the water of the Sacramento River, we find that in the well water there is thirty times as much free ammonia, twenty-two times as much albuminoid ammonia, three times as much chlorine, and two and a quarter times as much solid matter, as in that from the river. Yet, to the taste the water seems to be quite as good as that from many of the wells used in other localities.

The natural sources of the water supply for a large portion of the State are well shown in the map accompanying the paper by Dr. Stout, in the Appendix. The project of supplying San Francisco, and, en route, the Cities of Sacramento, Marysville, Stockton, and, perhaps, some others, from Lake Tahoe, is one of considerable magnitude, but presents no difficulties which engineering skill cannot easily surmount. The water supply would be abundant and the advantages resulting, in a sanitary as well as domestic aspect, far beyond any that can be estimated by mere pecuniary considerations. It can scarcely be doubted that the lakes and streams of the Sierra Nevada, while affording for all time a retreat and source of enjoyment to the worn and weary of city life and pursuits, will yet be called upon to supply the blessings of pure water to every available portion of the State.

WATER OF LOS ANGELES.

The water supply of Los Angeles is derived from two sources—one by the city, and the other by a private company. For the former, the water is taken from the Los Angeles River, conveyed by a ditch into a reservoir about five miles from the city, and thence in pipes. It supplies, mainly, the lower portions of the city. The other is procured from a marsh or *ciénega*, as it is there called, an excavation having been made into which the water rises by filtration or percolation.

By the courtesy of the Health Officer, Dr. Walter Lindley, a sample of the city or river water was sent for analysis. The result is given below by Mr. Jones:

As we have seen, the investigators on this subject of the ammonia determinations, as a measure of the organic matter in state of decomposition, disagree. The question of the reliability of this alone as a measure of the impurity of the water is an open one. The microscope alone is the conclusive test. If bacteria are found in a fresh sample of water taken from beneath the surface and carefully excluded from the air we may infer the presence of decomposing organic matter, as these bacteria feed on such matter, then our ammonia determination is of value, because we know the origin of its presence. In the Los Angeles water we find a quantity of ammonia and albuminoid ammonia sufficient to class the water as suspicious, according to Fox and Wanklyn & Chapman. The chlorine present being in combination as a salt has no effect. The nitrates indicate but very little, and without a microscopic examination we should not be willing to class the water as absolutely bad and unhealthy. The water is certainly not a first class water, as is indicated by the large amount of solid matter per gallon. I shall not hesitate, however, in saying that I believe the water to be fit for drinking purposes, and free from sewage or decomposing organic contamination in quantities to render it dangerous, as far as my analysis indicates. If, however, a careful microscopical examination is made of a fresh and properly collected sample at Los Angeles, and bacteria are found in any number, then there may be grounds for suspicion; until then the mere chemical test is not enough to put it under the ban of condemnation.

In addition to what has been said by Mr. Jones in regard to the analysis of the water of the Sacramento and Los Angeles Rivers, it may aid in the estimation of the results obtained to bear in mind what is supposed to be the true significance of the substances found. While chlorine, ammonia, albuminoid ammonia, and the nitrates and nitrites are usually considered to be the measure of the impurity or sewage contamination of a water, they are probably so only under certain circumstances. With regard to chlorine, for example, good natural water may be said to contain from .7 to 1.2 grains per gallon. An excess may or may not indicate sewage pollution. Much depends upon the amount of organic matter and nitrates present, and the mineral constitution of the soil. When an excess of chlorine is accompanied by an excess of ammonia and albuminoid ammonia, it becomes an important consideration.

The same may be said of the nitrates and the nitrites. Considered alone, their significance as to the present pollution of the water may be slight; yet they indicate the danger of pollution, or, according to English authorities, the one of oxidizing processes completed, the other of oxidizing processes going on. But, as has been remarked by Fox (Sanitary Examination of Water, Air, and Food), "we know not how soon the soil" (speaking of well water) "may become overdone with filth, and will, at first imperfectly, and at length finally, cease to cleanse by filtration the polluted water, when the organic matters will themselves enter the well."

Again the same author cautions us against pronouncing judgment upon a water from the examination of albuminoid ammonia alone, "a practice," he says, "which has thrown great discredit upon the chemistry of the subject."

A water, with or without an excess of free ammonia, which displays a larger amount of albuminoid ammonia than .15 milligramme per liter, should always be condemned if there is an excess of nitrogen as nitrates and nitrites (in non-chalky districts) and an excess over the average of the district of chlorides. If, with the above-mentioned excess of organic matter, the nitrates, nitrites, and chlorides should be insignificant in quantity, we should not form so unfavorable an opinion of the water, but would suspect the organic matter to be of vegetable origin—a view that would be strengthened or rebutted by other evidence such as that derived from a microscopical examination of the deposit from the water, etc.

The following extracts may serve as a guide in the estimation of the analyses given above:

If, indeed, the albuminoid ammonia amounts to .02 or less than .05 milligramme per litre, the water belongs to the class of very pure water. When the albuminoid ammonia amounts to

.05 then the proportion of free ammonia becomes an element in the calculation; and I should be inclined to regard with some suspicion a water yielding a considerable quantity of free ammonia along with .05 parts of albuminoid ammonia. Free ammonia, however, being absent, or very small, a water should not be condemned unless the albuminoid ammonia reaches something like .10 per million. Albuminoid ammonia above .10 per million begins to be a very suspicious sign; and over .15 ought to condemn a water absolutely.

A good water for drinking purposes should not contain more than .01 or .02 milligramme of free ammonia, and .08 milligramme of albuminoid ammonia per litre.

A water which possesses the following amounts of the two ammonias is classed amongst the suspicious waters. I have frequently noticed such waters as belonging to shallow wells surrounded by soil on which soapsuds, etc., are sometimes thrown. Free ammonia .01 to .02 milligramme per litre, albuminoid ammonia .12 milligramme per litre. The suspicion of contamination is strengthened if the chlorides (in districts where these salts do not abound) and nitrates or nitrites (in non-chalky districts) are in excess.

SEWERAGE.

Intimately connected with the water supply of cities and towns is their sewerage. Without an abundant supply of water no system of sewerage can be effective, and, under certain circumstances, the possession of a supply of water necessitates the construction of drains and sewers. They are to some extent mutually dependent upon each other.

Having briefly considered the water supply of some of the cities and towns of California, as made known by the correspondents of the Board of Health, it has been deemed proper, therefore, to pursue a somewhat similar course in regard to their sewerage, and to review the present condition of the State, so far as the sources of information can be made available in this important respect. It is to be regretted that, of those to whom questions touching this subject have been sent, so few have been found to give the needed information. Out of about sixty blanks sent out, but twenty-three have been returned filled up. They cover, however, almost all sections of the State, and will serve to show, in a general way, the adaptation of different localities to the proper disposal of sewage, and the extent to which the subject has commanded attention. It will be seen, in the brief review of which the limits of this report will admit, that many of the localities are poorly adapted by their topography for the construction of a perfect system of sewerage, and the lamentable fact is revealed that in many, in all sections of the State, there is an absence of a spirit of enterprise to overcome obstacles, and an apparent want of appreciation of the real importance of the subject. On the other hand there is discovered, from some others, the gratifying evidence that the apathy which has so long prevailed has given way to efforts at reform. It cannot be too strongly impressed upon municipal authorities, everywhere, that reform in this respect means improved healthfulness, and that healthfulness is one of the best promoters of prosperity.

As just stated, many of our interior towns are poorly located for the adoption of any system of sewerage, however imperfect. Situated upon a level plane, with surface water often within a few feet below, without natural outfall, without an abundant and constant water supply, the difficulties are not easily overcome; or, if near the banks of a river whose water is used for domestic purposes, the temptation to the pollution of the stream is often too strong to be resisted. The evils are thus transferred from one's own door to that of the innocent and unsuspecting neighbor. Of the reports, twenty-three in number,

received from correspondents, it is ascertained that a regular or in any way complete sewerage system had been adopted in one, but that efforts had been made to accomplish this result in seven. Of these the outfall of six was wholly into water courses, and partly so in one, the main portion being into a ditch near town, where it is used for irrigation. In three other localities sewerage facilities have been arranged, answering a temporary purpose—one discharging into the ocean, one into an inland bay, and one into ponds. In one the sewage is utilized for irrigation; in one it is drained into a creek in the center of the town. In two the system adopted is said to be efficient; in one it is partly so; in one it is so for about one-fifth of the area of the city; in one for about four months in a year. In seven the location of the town is said to be favorable to the construction of sewers. In five there is no restriction as to the kind of sewage allowed to enter the sewers—at least so far as refers to hotels and public buildings. Of the water courses said to receive sewage, four are not used for domestic purposes either directly or after junction with other streams; one unites with another stream after a course of twelve miles, which is, in some parts of its course, so used; and one after about forty miles. The materials used in the construction of sewers are: wholly redwood lumber, two; of lumber, bricks, and cement, two; of bricks and glazed iron-stone ware, one; of bricks, stone-ware, and cement pipe, one. Facilities for flushing are said to be ample in four; imperfect in one; and in one the fact is not stated. Ventilation is good in one; poor, or altogether wanting, in three; in two, not mentioned. Cess-pools are said to be used in sixteen; partly used in one; from the other towns no information is given. The cess-pools are said to be water-tight in one; not so in ten; information wanting in all the rest.

The drains leading to sewers or cess-pools are trapped and ventilated, in two; trapped but not ventilated, in two; neither, in eight; not stated, in ten. In one (Woodland, in the Sacramento Valley), where cess-pools are used altogether, Dr. Ross informs me that a few only of the drains leading thereto are trapped at their connections with the houses. It is the common custom to ventilate the cess-pool by means of a wooden pipe rising a number of feet from the center. Of the privies, it is said that many of them are ventilated by the Eastmond and Cottier plan.

Of the localities from which the above data have been received, three are in the mountains—all favorable to drainage; on or near the coast, four—three favorable to drainage; in what are known as the coast valleys, six—five being favorable; and ten in the interior valleys—seven being said to be favorably located—in one of these *because of its proximity to the Sacramento River.*

Were all the localities from which responses have been expected embraced in this report, the interior valleys would not stand in quite so favorable a light, many being such as were described just now. The facts collected, as a whole, show an urgent need of improvement. It is by no means a flattering commentary upon the enterprise of our people that, of twenty-three towns and cities, some of them large and prosperous, the centers of extensive commercial or agricultural interests, not a single one should as yet have completed a system of sewerage, and only six commenced the work in earnest. Yet the correspondents tell us that of these twenty-three towns, nineteen are favorably located.

Several causes have concurred in bringing about this result; one, a prejudice against what are considered, by some, modern innovations against long established habits and a consequent inappreciation of the benefits to be derived; one, inattention and procrastination in consequence of the engrossing cares of public and private duties among those having power to act, the evil itself being fully recognized; another, the expense attending such works and, in some instances, a defect in the law which fails to confer power to expend money and increase taxation for such a purpose without a vote of the people in its favor; and lastly, in a few cases, the absence, as yet, of any severe or terribly alarming epidemic, manifestly due to the neglect of this duty, desolating homes and awakening the voices of mourning among the people. One of these obstacles, having its origin in prejudice and ignorance of sanitary laws, it is a prominent object of the State Board of Health to remove. Some of the evils of neglect will be alluded to in different parts of this biennial report; but it seems proper to refer to them, and to the advantages arising from efficient sewerage systems, briefly in this place. It ought to be sufficient to call attention to the splendid results obtained in England by the adoption of the sewerage system; the diminution of mortality wherever it has been introduced; the reduction of the death rate of twenty cities in England since the completion of sanitary works—a reduction equal to 16 per cent.—and the further fact of the abatement of mortality in these same towns by one single disease—typhoid fever—of 47.7 per cent.; to the City of London, which, with a climate much less salubrious than Brussels or Paris, exhibits, by reason of its sanitary works, a conspicuously lower rate of mortality; to St. Louis, in this country, raised from one of the lowest to almost the first in salubrity among American cities. There is no theory about these things; they rest upon the impregnable bases of facts, and they have been the result of the sanitary measures of which the introduction of a sewerage system is one of the leading features.

Among the diseases which sustain a more or less close relation to sewers, and whose death rate has been sensibly modified by good sewerage, may be mentioned typhoid fever, diarrhœa, cholera, possibly diphtheria, and consumption. Besides the evidence as to the first of these already given, based upon the statistics of English towns, the opinions of many of the leading sanitarians of the day might be cited, all tending to substantiate the same fact. The medical officers of Great Britain, whose long observation of the effect of sanitary measures entitles their opinions to great weight, are well convinced of the existence of this relation, and it is only recently that Professor Alonzo Clark, of New York, has added to the list of essential fevers one under the name of "cess-pool fever," which, though not precisely typhoid, has many characters in common with it.

The history of epidemic cholera affords the most abundant evidence not only of the effect of insanitary conditions in promoting its spread and increasing its fatality, but also of the salutary influence of an effective sewerage system in arresting its progress and mitigating its violence. This has been shown to be due not alone to the means provided for conveying away materials in every sense offensive, but to the protection such a system affords against contamination of the water supply. Pure air becomes then intimately associated with pure water in the prevention of one of the severest

maladies of which the present century has been the witness. Dr. Parkes, speaking of the "influence the construction of sewers has had on the death rate of towns," quotes the opinion of Dr. Buchanan, who considers, in view of the effects observed, that cholera epidemics have been rendered "practically harmless. The immense significance of this statement," he adds, "will be at once appreciated."

With respect to the relation of consumption to works like those now under consideration, opinions are not fully settled; but, as it has been well demonstrated that there is an intimate relation between soil dampness and this disease, and as drainage and, consequently, the improvement of the soil in this respect is one of the essential parts of a complete sewerage system, it is reasonable to infer that the influence would be marked. This has, in fact, been shown to be the case by the statistics of twelve towns, selected by Baldwin Latham from the reports of the medical officers to the Privy Council—their aggregate population being 304,859. Thus, in these twelve towns, there was a mean reduction in the per cent. of consumption, as the result of sanitary works, of 29.9.

Dr. Buchanan's report, "Upon the Results of Works for Promoting Public Health," shows that the general death rate of Newport, in South Wales, was reduced 23 per cent., while the ailments known as phthisis were reduced 32 per cent. At Cardiff the general death rate was reduced 24 per cent., and the death rate from phthisis 17 per cent.. At Salisbury the general death rate was reduced 9 per cent., and that due to phthisis 49 per cent. (Denton.)

The relation of defective sewerage to diphtheria has been already spoken of in another part of this report.

Perhaps sufficient has been said to convince the most sceptical that a good and efficient sewerage system is not without positive advantage in a sanitary point of view, and worthy of some effort for its attainment. Of course, the adoption of the sewerage system presupposes the existence of an outfall, and that this outfall is so situated as not to involve the pollution of the streams, or the intermingling of unpurified sewage therewith. To prevent this has long been a subject of study and investigation among sanitary engineers, and hence the disposal of sewage constitutes one of the principal difficulties. In towns located near the beds of rivers these will ultimately become the receptacle of the sewage, and various methods have been proposed of depriving it of its offensive and hurtful properties, and of rendering the water which receives it fit for domestic consumption. The history of the efforts to purify the Thames and other rivers of Europe is full of interest, and the result has been presented in striking contrast with other rivers which have been permitted to receive unpurified sewage.

It will be impossible in this report to enter upon a minutely detailed account of the several processes which have been proposed for the neutralization of the deleterious properties of sewage. None of them are perfect; complete purification is not aimed at, because impracticable; but simply such an extent as will reduce the organic matters held in solution below what experience has shown to be hurtful.

To glance, then, at the methods by which this has been accomplished, we may mention:

1. Purification by irrigation, the rationale of the process being

that through the action of vegetation in assimilating and utilizing the organic matters in the sewage, and that of the soil in its role as a filter and oxidizer, it is rendered sufficiently pure to be admitted to the stream—supplemented as the process will there be by dilution and by the oxidizing action of the water. The water passes through the soil and thence to a water-course by means of drains five or six feet deep. The arrangements for the purpose will depend upon circumstances—upon the topography of the locality, and the possible necessity of elevating the sewage upon the land by pumping; upon the character of the sewage, and the nature of the soil. The quantity of sewage to be applied must be regulated by the capacity of the soil to absorb without overflow, and by the demands of vegetation. The irrigating ground, which should be loamy, requires preparation both upon the surface and underneath; the former must have a slope to favor the proper covering of the soil and to prevent absorption. Where the contents of water-closets are permitted to enter the sewers, it is customary to allow the sewage to pass through a strainer so as to separate the coarser particles before it is permitted to flow upon the land. The details of the process cannot be fully described here. For their successful operation engineering skill is required. It need only be added that, in the opinion of most of those who have given the subject their attention, the results obtained are better than those from any other plan of sewage purification. Though sewage thus applied to farms is recognized as a good fertilizer, it is questionable whether it can ever be brought into use as a profitable pecuniary investment.

A method of irrigation well adapted for use on a small scale, as for farm houses and where no sufficient outfall is available, is that adopted by G. E. Waring for his own use, and which has since been recommended by others. Only liquid sewage is applicable to the purpose, and hence the contents of water-closets are excluded. The sewage from the bath-room and kitchen is received just outside of the house, into a gully or grease trap, tightly cemented, and ventilated by a pipe extending above the roof of the house. The solid matters fall to the bottom of the trap, the grease congeals and floats on the surface of the liquid, while the latter is discharged through a siphon into a drain leading to the ground to be irrigated—the discharge pipe being made of the glazed or vitrified stone-ware. This connects with a system of open-jointed or perforated drain tiles, consisting, as Mr. Waring has arranged them for himself, “of one main fifty feet long, and eight lateral drains six feet apart, and each about twenty feet long. These drains underlie a part of the lawn, and are only about ten inches below the surface.” “During the whole growing season,” he says, “their course is very distinctly marked by the rank growth of grass over and near to them. The difference of growth in their immediate vicinity being so great that were the work to be done over again I should place the lines but three feet apart.” The slope of the ground is not more than fifteen inches between the extreme ends of the system.

But circumstances are not always favorable to sewage irrigation, or it may not be possible with large cities to obtain land suitable for the purpose, at a reasonable distance, or at a cost that will justify the outlay. For these and other controlling reasons, the method of purification by precipitation has been proposed.

Various conditions attach to this process; the sewage must be strained to remove the coarser, insoluble contents, as well as foreign bodies, which may have found their way into it. It is then to be treated by chemical agents, while at the same time an opportunity is given for subsidence. The best chemicals are those which deodorize and disinfect the sewage while they occasion precipitation. Means are also to be provided for the disposal of the precipitate.

As precipitating agents the salts of alumina, alone or variously combined, have been tried; iron salts, as the sulphate or perchloride; lime, one of the first substances used and preferred on account of its cheapness; the salts of magnesia, and various combinations of these several substances, preference being usually given to those possessing the greatest purifying powers not only, but which least affect the manurial value of the precipitate or *sludge*. The common plan has been to dry this sludge, and thus dispose of it as manure. Several other uses have been made of it with the view of defraying the expenses of the process.

The result of precipitation, however, by itself, has proved unsatisfactory. In the opinion of the majority of those best capable of judging, "the solution of the sewage difficulty will, without doubt, be found, in a large number of cases, in a combination of precipitation with irrigation; the former, for the purpose of deodorizing the sewage and removing the solid parts, and the latter, for the purpose of obtaining, where necessary, a high standard of purity in the effluent water." (Robinson and Melliss: *The Purification of Water-carried Sewage*.) Other processes, as filtration through a porous soil, through charcoal, coke, spongy iron, etc., have been attempted, but with only partial success. They have been, in a sanitary point of view, for the most part failures. But it sometimes happens, and in some of the small towns of California it is unquestionably true, that by reason of this difficulty of obtaining a supply of water and the expense attending the water-carriage system for the disposal of sewage, all the methods alluded to are impracticable. The adoption of some other plan, therefore, becomes not a question of choice but of necessity.

Leaving out of view the question of cess-pools and privies, the evils attendant upon which it is the object of all sanitarians to avoid, probably the best substitute for the sewage system may be found in one of the methods adopted for the dry removal of the excreta. Of these, the dry earth system is the best known, and probably the best in practice. The principle is the immediate deodorization of the excreta by dry earth, and their removal, from time to time, as fertilizers. Practically, its operation is simple—a sufficient quantity of the earth being caused, by a proper mechanical arrangement of the closet, to cover the fecal discharge and absorb the urine.

Disinfection is at once effected, all odor is removed, and the receptacle, which usually consists of a pail or tub, may be allowed to remain until sufficiently full to require removal. The requisites are that the earth shall be dry; that it be of good quality—containing more or less clay, or consist of marl or vegetable humus; that it be pulverized and sifted from gravel; that the supply be ample. It is estimated that one to one and one-half pounds of *dry* earth will be ample for each dejection. The plan may be adopted for indoor use as a substitute for the water-closet, or outside, in lieu of the ordinary privy, the

same care being taken to secure the timely removal of the receptacle. No liquids should be allowed to mingle with the mixture, the object being to keep it sufficiently dry to prevent offensive decomposition. Hence, other means must be provided for the disposal of the refuse and waste water from the house and kitchen. For the latter, no better arrangement can be made than that spoken of above, as used for underground irrigation by Mr. Waring, of Newport, Rhode Island.

The used soil removed from these closets constitutes a valuable fertilizer, which, according to the best authorities, is entirely inoffensive.

The plan, though simple and easy enough of application to private families, possesses some disadvantages when adopted by towns. It is beyond regular and perfect control, and the result liable to be spoiled by the careless admission of water; the removal of the used soil at proper intervals, is, if not neglected, expensive; the procurement of earth in proper quantity is likely to be difficult. Take for example a town containing two hundred houses, each provided with an earth closet; allowing four persons to each house, and one and a half pounds of dry earth daily to each person, there would be required 1,200 pounds daily, or 438,000 pounds per annum, equal to 219 tons. It is true that the used soil may be dried, pulverized, and used again, and that the process may be repeated almost indefinitely; but, even with this advantage, the difficulties of obtaining earth of a proper kind, of drying and sifting it, and of delivery and final removal, are such that few of our country towns would feel disposed to encounter them. For private families—for isolated dwellings—when the water supply is limited and the facilities for sewers inadequate, the dry earth system cannot be too strongly recommended, at least as against cess-pools and privies. Other substances have been used with the same view, as ashes, and even the dust and sweepings of houses; but while they are less effectual as disinfectants than dry earth, they result in materials much less reliable as fertilizers. That all of them may prove successful in remedying what is universally acknowledged to be a nuisance, however, by disinfecting and deodorizing and effecting the removal from one's door of materials whose presence is always considered objectionable and disgusting, must be admitted. The object is one which, considered as a sanitary measure, it is worth some trouble and some expenditure of money to consummate.

It seems, therefore, in view of all that has been said, that the difficulties in the way of any of these enterprises are so great that it would be almost impossible for some of our valley towns, as was remarked in the beginning of this report, to adopt any of them, and that cess-pools, notwithstanding the very strong objections which have been urged against them by sanitarians and by all who have studied the means best adapted to render our homes healthful, must perforce be resorted to. But cess-pools mean something more than the shallow holes in the ground, or the loosely constructed excavations which are often dignified by such a title. Allusion has already been made to this subject in the consideration of the water supply, and to the danger of contamination of the latter by percolation through the soil into shallow wells. Instances might be multiplied where such contamination has been demonstrated, not only by the breaking out of disease, but by chemical analysis; nor has any precise limit been fixed beyond which, under favorable circum-

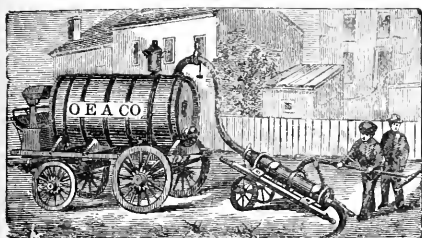
stances, such percolation may not extend. A remarkable instance is recorded in which it was demonstrated that typhoid fever was communicated a distance of a mile or more by an underground communication of an infected stream with the water supply of the village of Lausen, Switzerland. From the 7th of August, 1872, to the end of October, 130 cases occurred. All who drank the water became ill; and of those who drank other water, none. That this water, in its passage from the source of infection to the contaminated well was subjected to filtration was demonstrated by the fact of one hundred weight of flour, which was thrown in at the source, having disappeared by filtration, while salt being added was soon detected, by analysis, in the well. Many equally striking instances might be given showing the possibility of water contamination by privies and cess-pools, as well as from the waste water thrown out upon the soil from the house to spread whither it will, or to percolate through the soil. A single cess-pool in connection with an isolated dwelling, properly constructed, perfectly cemented, and sufficiently small to make frequent cleansing absolutely necessary, and not too near the well, might, doubtless, be exempt from the objections urged against them in cities. It is the exception, in fact, to find them water-tight, and the only protection to the wells on the premises is in the oxidizing power of the soil; a safe protection for a time, but not inexhaustible. In large cities, with small lots, and each lot provided with a cess-pool uncemented, and leaky, and a privy equally liable to discharge its liquid contents into the soil, and withal a well, the only source of water supply, and this condition of things remaining unchanged for years, is it surprising that the soil should ultimately become supersaturated with the products of animal and vegetable decomposition, its oxidizing power lost, and itself the source of contamination, not only of the wells but of the atmosphere about it.

"The more insidious process," says Waring, "is that of the gradual fouling of the semi-porous earth lying between the source of the impurity and the drinking-water well. In such cases the exudation is quite or nearly constant; there is little opportunity for the air to restore the filtering power of the soil, and it becomes saturated with impurity, inch by inch, until, perhaps after a month, or perhaps after several years, the saturation reaches the well; then every drop oozing from this source carries with it its atom of filth."

It is not without reason that cess-pools and privies should have been universally condemned by those who have given the subject attentive examination.

Making the cess-pool water tight modifies the evil but does not remedy it, for there still exists the danger of the passage of foul air from the cess-pool into the dwelling through the drains. But there still remains the privy, with its foul, reeking contents, endangering both air and water, and which even close attention to ventilation and disinfection cannot wholly relieve. These things, however, when presented as the only alternative, should at least be made endurable by the best means which can now be suggested—by making both cess-pool and privy pits so small as to require frequent removal of their contents, and by making the former securely water tight, and disconnecting them from the interior of the dwelling by the grease or gully trap previously alluded to. One of these, completely dis-

connecting the house from the drain leading to the city sewer, which the writer has had in use for some time, has done excellent service.



The vaults of privies should be thoroughly ventilated and frequently disinfected; they should also be emptied once or twice a year by the odorless excavating apparatus. For the benefit of those to whom this valuable apparatus is unknown, an explanatory cut is inserted. Among the disinfectants, sulphate of iron (copperas)

is one of the cheapest and best—about five to eight pounds dissolved in a bucketful of water being thrown in once a week.

In the few towns or cities of California in which correspondents report sewers to have been commenced or completed, the materials used in their construction are reported to be "redwood lumber;" "of the latter and bricks and cement pipe;" "of brick and glazed iron-stone ware."

Of the woods obtainable in California, the redwood is unquestionably the best, being durable and, if of good quality, less liable to decay than any other. For temporary use, even in damp soil, it has answered an excellent purpose. When regard is had to permanency, as in the construction of a definite sewerage system, one of the others named will be found less liable to get out of order, and the cheapest in the end. No fixed rules, however, can be laid down for guidance in sewer construction. Much must depend upon the topography of the place, the inclination obtainable, the outfall, etc. These things can only be determined by a competent engineer.

In general, it has been customary to make the main sewers of brick, while the side branches are of glazed stone-ware or of cement. Except for the very largest structures, the stone-ware properly glazed and burned, or the cement pipes, well made of reliable cement, capable of withstanding proper chemical and mechanical tests, should be used. In speaking of this subject, Latham (Sanitary Engineering) states that his experience "with the construction of concrete sewers shows how easily such work can be scamped by an unscrupulous contractor. It is, therefore, absolutely necessary in the construction of concrete sewers that no person should be engaged who will not strictly adhere to and implicitly carry out the orders of the engineer." He adds: "The author has witnessed failures in concrete work, apparently of the best description." Either of these kinds of pipes are made of almost any desired size, from three inches to twenty-four inches in diameter, the latter being sufficiently capacious for almost any purpose. The advantages over other materials are durability, strength to sustain the superincumbent weight of earth when deeply laid, smoothness of internal surface, thereby offering the least possible resistance to the flow of sewage through them, imperviousness, convenience of size for almost any sewer, and, as compared with brick, cheapness.

The questions relating to ventilation of sewers and trapping of the house connections will be sufficiently considered in that subdivision of the subject which relates to the "Hygiene of the Dwelling."

For one of the best treatises upon the subject of sewers and the

proportion of their size, form, and inclination to the volume they have to convey in order to be self-cleansing, and all other points in relation to this difficult subject, the inquirer is referred to the last edition of the elaborate work of Baldwin Latham on "Sanitary Engineering."

The sewerage of the larger cities of California deserves more than the cursory notice which has been given it. Of these cities, information of a somewhat definite character has been received from Sacramento, Los Angeles, Marysville, and Oakland. The former, from its position in a somewhat low and level plain at the junction of the American and Sacramento Rivers, has had many difficulties to contend against in devising and adopting a suitable sewerage system. Some of them are not yet overcome, but through the continued efforts of the City Board of Health, sustained by the Board of Trustees, a general plan has at length been agreed upon, which, though involving considerable expense, besides being far from perfect, will, it is believed, prove sufficient for some years. A pretty correct idea of this system may be obtained from the accompanying "chart," which has been prepared for this report by Mr. Bassett, the present accomplished City Engineer. It will be observed that the plan embraces a sewer along every alternate street running from north to south, with side drains connecting therewith through the alleys on either side. These sewers have a fall of about six inches for each block from the north levee to R Street, where their contents unite at the foot of Sixth Street, and empty into what is called the "drainage canal"—an open ditch about five feet wide at the bottom and six feet deep—designed ultimately to convey the sewage and drainage water to Snodgrass Slough, a distance of about thirty miles. The following general description of the work, as now completed or under contemplation, will serve more fully to explain it:

The remarks of the engineer upon the subject of subsoil drainage and its importance as a sanitary measure deserve the attention of the authorities. Soil dampness is one of the evils inseparable from towns situated like this, upon an almost level plain, at the junction of two rivers liable to overflow, within whose leveed banks it sits like a basin, lower than the surrounding waters from which it receives the sillage. In consequence of this, cellars are rendered unsafe, low lots are often covered with water, and the soil is more or less cold and damp. The perfection of a system of subsoil drainage here would be of incalculable benefit. It may be seriously questioned, however, whether the policy of adopting a system of irrigation for the land south of the city would prove expedient as a sanitary measure or profitable as an investment. The objections arising from the first of these considerations might be obviated, land being abundant for intermittent irrigation, by works properly constructed for the purification of the sewage. Perhaps, when the population of the city has largely increased, some such plan may become a necessity.

Engineer Bassett says:

The sewerage system of Sacramento is still incomplete, although a plan has, in great part, been worked out and adopted. The system has for its outlet the low country to the south of Sacramento, and ultimately, when the drainage canal is completed, will connect with tide water via Snodgrass Slough.

From the bottom of the sewers at Sixth and R Streets to low tide in the Bay of San Francisco there is a fall of fourteen feet. The distance from Sacramento to the farthest point inland on the line of the canal, where the influence of the tide is felt, is between 25 and 30 miles.

A short distance below the Riverside road, and about one-half mile south of Y Street, the drainage canal is divided into two branches, the westerly branch passing to the west of Cemetery Hill to Sixth Street, and thence up Sixth Street to R Street, where the city sewers at present unite and discharge, this branch drains that portion of the city to the west of Thirteenth Street. The easterly branch passes to the east of Cemetery Hill, and enters the city at Sixteenth and Y Streets, and passes under the levee on R Street at Eighteenth; thence through various streets to East Park, at Thirty-first and G Streets. This branch is intended to drain that portion of the city from Thirteenth to Thirty-first, and through it is discharged the rain and sillage water coming from the country to the east of the city, and which, during a wet winter or high water in the American River, is very considerable in quantity, and, before the cutting of the Burns Slough ditch, caused quite a considerable portion of the city and the country to the east along Burns Slough, to be covered with stagnant water until late in the season, or until evaporated by the hot sun in May or June.

As yet no connections with sewers have been made with the Burns Slough ditch; but when sewers are constructed east of Thirteenth Street they will have to be discharged into it, for the reason that sewers running easterly from Sixth and R, with the necessary rise per block, are too high for the street grades after passing Thirteenth Street.

On the low grade portion of the city, the tops of the sewers are placed from two to three feet below the grade of the streets, and the bottoms of the sewers from three to five feet below the grade of the streets.

Above R Street, both at Sixth Street and Seventeenth Street, the plan adopted gives a main sewer to every odd-numbered street, from which there is to be a branch at each alley into which the sewerage from the adjoining property is admitted. The rain or other water from the streets is admitted into the main or alley sewers through cess-pools covered with gratings and placed in the gutters as occasion demands.

At least once in each block on the line of a sewer a man-hole is left, which, where pipe sewers are laid, also serves for a cess-pool by extending it for three or more feet below the bottom of the sewer. These cess-pools are put in for the purpose of catching the heavier matter, as sand, etc., carried along by the sewerage, and which drops into these cess-pools and is taken out, thus preventing it from being deposited in the sewers and eventually choking them. These cess-pools are put in wherever there is a change in the direction of a sewer or at the junction of two or more sewers, and in all cases wherever an alley sewer connects with a main sewer, thus permitting the heavier matter brought by the alley sewers to be deposited in the cess-pools at its entrance into the main sewer.

At the head of every branch sewer an opening is left for flushing. Flushing is accomplished by turning one or more streams into the sewer through the openings left for flushing, from the hydrants which connect with the water mains. The main sewers are flushed by turning in several hydrant streams near the upper part of the sewer. This flushing is performed once or twice each month, according to the situation of the sewer and the nature of the sewage flowing through it.

The sewerage system of Sacramento, so far as it is extended, in great part accomplishes two purposes: It carries away (1) the surface water from the high grade portion of the city, and a portion of the low grade, and (2) the sewerage. A third object, and a very important one to the health of a city, it entirely fails to accomplish: that is, the drainage of the subsoil. From soon after the rise of the water in the rivers from the winter rains until they fall again in May or June, the ground at from two to four feet under the surface is completely saturated with water. In many places it even rises to the surface, and often stands to a depth of several inches. This is because the sewers are at some points higher than the points to be drained and are made water tight, thus admitting no water except at points specially fixed for that purpose. This is a necessity with sewers intended for conveying away the sewerage of towns, which contains, as it does, so much filth; otherwise the sewerage would poison the soil and be of itself an evil to be avoided if possible.

The cause of such a large amount of water in the subsoil is, as nearly every resident of Sacramento is aware, sillage from the Sacramento and American Rivers. These streams maintain a height of from one to ten or more feet above the general level of the surface of the ground in the city for a greater or less length of time during each winter and spring.

The height of the sillage water in the ground, in the different parts of the city, varies according to the distance from the rivers, being higher in the northern and western parts of the city and lower in the southern parts. This difference is greater than might be imagined—the difference between Sixth and R and anywhere along B Street being frequently so great as twelve feet.

Now, with this difference in the subsoil water from B to R Streets, the question very naturally arises, what is to prevent a large portion of it from being drained off if the proper subsoil drains were constructed. Thousands of dollars have been expended in filling, and the result is only to raise the water higher, for it has no outlet; and such will continue to be the case until the surface is raised sufficiently to drain into the sewers, which will even then leave the *subsoil* filled with water, damp, cold, and unhealthy.

The only remedy for this is subsoil drainage, which could be effected at a trifling cost compared with the cost of raising the surface—in low places sufficiently to drain into the sewers and with the benefit to be derived therefrom. The cost of raising a single block one foot high would require 16,800 cubic yards of earth; this at a cost of 30 cents per cubic yard would amount to \$1,866 60; sufficient at one dollar per foot to construct 1,866.6 feet of drain, or at two dollars per foot, 933.3 feet of drain, which would dry the soil to a depth below the surface depending on the locality. In the vicinity of B, C, and D Streets, where the sillage water stands longest on the surface of the ground, the soil could readily be drained to a depth of five feet lower than at present; while in the vicinity of Fifth and P, Q, and R Streets, some good could be done; but at the latter points the general surface of the ground is so near the level of the water at the outlet that the advantage gained would not be so great. Still it would amount to something, and that advantage would be greater the greater the distance from Sixth and R Streets.

Baldwin Latham, C. E., author of a work on Sanitary Engineering, says in regard to the subsoil drainage of the sites of towns: "The advantage of complete subsoil drainage of the sites of towns appears to be so great that every effort should be made, and no expense spared in order to secure perfect works for drying and aerating the subsoil of all urban districts. The extensive works of subsoil drainage that have been carried out in every civilized country in the interest of agriculture show, beyond doubt, that both the health of animals and plants is materially benefited by works of this character. In town districts, where the soil to some extent naturally becomes polluted by the absorption of gaseous impurities from the air, or by the admittance by percolation of decomposing matter from the surface, it is absolutely necessary, in order to render the soil capable of performing its function of oxidizing and neutralizing the elements of decomposition which are brought into contact with it, that works of subsoil drainage should be prosecuted. It is now well known that the abundant admission of air into a soil enables that soil to exert the most powerful chemical influence upon all organic compounds, so great indeed as to be capable of purifying the crudest sewage. The effect of drainage upon the soil is to promote porosity, and the effect of porosity is to make the soil dryer, warmer, and less capable of conveying extremes of temperature. It is also well known that a soil perfectly saturated with water, which can only part with its water by evaporation, is rendered cold and unwholesome as a site for human dwellings, for all impurities that enter the soil accumulate."

With the subsoil of *our* city well drained, there can be no doubt but that the benefit derived in its increased healthfulness would more than repay the cost of doing the work; for, in many localities, there can be no doubt that a large portion of the sickness is caused by the cold, damp nature of the soil.

As our system of drainage is at present constituted, every particle of the rain-fall in our city, as also the sillage, and what is pumped into the city, has to escape by evaporation or through the sewers. The result is, that probably during the rainy season nine-tenths of the water that enters the city has to be absorbed by the soil and retained until the fall of the rivers, when the heat of the sun becomes sufficient to evaporate it.

The outfall for the sewerage from the City of Sacramento is very poor, especially late in the rainy season, when the country below the city becomes filled by the accumulated rain-fall of a wide scope of country, assisted by the sillage from the Sacramento and American Rivers, and the backwater from the Mokelumne and San Joaquin. This outfall is protected from backwater by a cross levee at the head of Snodgrass Slough and another at Freeport, with flood-

gates through which to permit the water above to flow off after the backwater (or flood water) has gone down. The outfall is also protected from overflow from the Sacramento River by a levee on the river bank, constructed to a width of six feet on top and two feet above the high water of 1878. Without this levee, the country below Sacramento would be flooded nearly every winter, and all the water, including the sewage, rain-fall, and sillage, would have to be pumped out of the city, as was the case in 1878, when a break in the levee a short distance below Sacramento caused the water to back up to the city and stand several feet deep outside the R Street levee.

In conclusion, I wish to indicate what, in my opinion, would be the best system of sewerage and drainage for the City of Sacramento. That system would be, in my opinion, a double one, having a system of pipes and connections for carrying off the sewerage to a point outside the city, where means should be provided for pumping it and distributing it over an area devoted to cultivation by irrigation; a second system of drainage, with supplementary ditches and drains, should be provided for carrying off the rain and sillage water which should be permitted to escape by its natural outlet to the low country below the city by the way of the drainage canal.

Located at the junction of the Burns Slough ditch with the Sixth Street ditch is a sufficient quantity of land well adapted to cultivation by irrigation. Here pumping works should be located and here a reservoir should be constructed, from which pipes, for conveying the sewage, should extend into all parts of the city. During the greater part of the year a pump of moderate capacity would raise the sewerage as fast as supplied from the city. During heavy storms or while the sewers were being flushed, it might be permitted to overflow and escape with the rain and sillage water.

By this means the sewage and drainage water could be kept separate, thus reducing the cost of pumping to a minimum: the height of pumping would not be so great as to pump into the river, and the return from the sewage used for irrigation would, at least in part, pay the expense of pumping; the sewers, being independent of the outfall into the country below (which is very poor) could be placed as low as necessary, thus giving the necessary fall for making the sewers self-cleansing, and preventing their becoming choked from the deposit of the heavier sewage matter; the soil would not become polluted as is the case with the sewage running in an open ditch, and the air would not be filled with noxious, poisonous gases and unsavory smells, as is the case at present.

In Sacramento, as in other cities, a serious danger is to be observed in the inefficient protection afforded against the escape of sewer gas into houses—the faulty water-closets, the defective traps, the imperfect ventilation of drains, and very often the shiftless, unscientific arrangement of the plumbing designed to avert the danger arising from such sources.

The sewer system of Los Angeles is as yet incomplete. It consists principally of one brick cemented sewer-main, extending for a distance, probably, of nearly three miles, with side drains connected therewith. The main sewer is about three feet wide by two feet high, and possesses a fall of three inches to one hundred feet. With the exception of that portion of the city lying west of Main Street, all descriptions of sewage are permitted to pass into the sewer, whence they are conveyed to and deposited upon a field, to be utilized as fertilizers. The side drains are, many of them, said to be imperfectly trapped and ventilated. In many portions of the city cess-pools are still used.

For the following report on the sewerage system of Oakland, acknowledgments are due to the City Engineer, T. W. Morgan, Esq.:

Nos. 1, 2, and 3—The system of sewerage, by which the City of Oakland is designed to be drained, is as follows:

First, to take advantage of the natural topography and arrange the sewers so that the flow of sewage will be in the direction of the general flow of the surface water, as near as is possible, and at the same time have the sewers in the public streets.

The topography of that portion of Oakland lying between the lake and the Bay of San Francisco is as follows: The highest point in the main part of the city is at the crossing of Twelfth and Washington Streets, this being thirty-eight feet above ordinary high tide. Running east and west from this point is a ridge which divides the waterfall. About one-third of the city south of Twelfth Street drains to the south into the estuary; one-third, north of Twelfth Street, drains to the north to Twentieth and Twenty-second Streets; the other third, south of the northern boundary, drains to the south and west to Twentieth and Twenty-second Streets, where the ground is low.

MAIN SEWER.

A main sewer was constructed through this low ground, running from Lake Merritt to the shore of the bay. It is two miles long, is five feet wide by five and one-half feet high, of brick

on the solid ground, and of wood on the marsh, and receives the sewerage from the north and the south, and discharges the same into the bay.

At present there are six sewers from the north and twenty sewers from the south discharging into this main sewer. There is a continual flow of the sewage through the main sewer. The high tide is kept from flowing back into the sewer by a self-acting gate which closes by the pressure of the flood-tide. As the tide recedes this gate opens, and when the tide is out the gate at the lake is opened by hand, and the water of the lake being from two and one-half to three feet above the bottom of the inlet, a strong current rushes in and thus scours out the sewer.

The water in the lake is kept up by the dam at Twelfth Street, which is supplied with flood-gates, which let in the flood tides and keep the water from going out with the ebb tide. From this it may be seen that we have a most perfect system of sewerage by maintaining the dam and flood-gates at Lake Merritt. Without these the main lake sewer would not work successfully as it now does.

The sewers in the southwest portion of the city drain, at present, into the marsh lands and the sloughs therein. Sooner or later a main sewer will be required to take the sewerage from this quarter, for the outlets of these sewers will soon be closed by the filling in of the marsh lands; and the distance to the estuary is too great, there not being the necessary fall to admit of the sewers being continued thereto.

The greater portion of East Oakland has sewers which discharge into the estuary. The north-western portion, near the lake, and the adjacent portions of the territories which are known as Clinton and San Antonio, have no sewers at present. The drainage is into a creek or ravine along which there has been recommended a main sewer. For the northwestern portion, a plan was submitted to the City Council for a system of intercepting sewers, which would provide for the said northwestern portion of East Oakland.

No. 4—The sewers are used for all kinds of sewage matter.

No. 8—The sewers in main streets are constructed with cement or iron-stone pipe, about equally divided. The earlier sewers are of cement, but latterly the iron-stone pipe has been more generally used.

No. 9—All the sewers, with the exception of four, are provided with flushing man-holes or lamp-holes.

No. 10—As to ventilation, there have been no extended means provided in the street sewers. The man-hole covers are perforated more or less, but these generally become stopped after being traveled over, as the dirt thereby lodges into the holes. In the main lake sewer there was no provision made for ventilation, except its being open at the two ends above the water; it was thought by the engineer that there would be a current of air through its entire length, as the outer end faces the prevailing westerly winds, and the sewer lies in the direction of the winds. This expectation has been realized. In the dry season the catch basins along the main sewer at each street corner become dry, so that there is no water seal by the trap-wall; they thus afford ventilation to the sewer; but this is not a desirable method of ventilation, for the gas or odor from the sewer is inhaled by persons passing by. In winter, when dwellings are closed for comfort, this ventilation is stopped by the catch basins being filled with water, and the gas must find an escape into dwellings through imperfect traps. In my judgment there should be either one or more large ventilating chimneys constructed in some portions of this city, of sufficient height and draught to draw the gas from the upper ends of the sewers, through pipes laid for the purpose along the summits of the drainage.

No. 11—There are many cess-pools used where there are as yet no sewers in the street on which the property fronts; they are generally pumped or bailed out, and the contents sometimes allowed to run over the ground. In many instances they are abandoned or filled up and another one dug on some other portion of the lot.

No. 12—The cess-pools are not generally water-tight, so that they allow the fluid portion of the sewage to soak through the earth. In some few cases they are ventilated; generally they are not.

No. 13—There is usually a trap in the sewer leading from the house to the street sewer just outside the building, and the drains at the house are connected with leaders to the eave-troughs for the purpose of ventilation; but this plan of ventilation is objectionable where the top of the leader is near the windows of upper stories, or on the top of one-story bay windows or verandas.

I would say, in connection with this matter, that there ought to be some officer of the city with authority to inspect every house and see that proper drains, connections, traps, and ventilators are constructed, and who should enforce strict compliance with such regulations as may be determined upon by the city authorities for the promotion of the health of the city.

Respectfully submitted,

T. W. MORGAN, City Engineer.

OAKLAND, July 12th, 1879.

SEWERAGE OF MARYSVILLE.

A general idea of the sewerage of this city may be obtained from an examination of the accompanying "chart," which has been kindly furnished by Dr. A. B. Caldwell:

This city is located in an angle formed by the Yuba and Feather Rivers. In general terms it may be said that the sewage from the lower or southern portion of the city empties into the Yuba; that from the upper or northern, and eastern and western portions, into a slough, which ultimately flows into the Yuba. The drainage of the lower portion is effected, in part, by two brick sewers—one being on D Street, from Fourth to the river, the other on B street, from Third to Front. Cross streets and alleys are connected with these by surface drains—troughs or wooden gutters—running along each side of the street. The drainage of the upper portion is effected by surface drains, many of them being open gutters. Such is a general outline of the system hitherto adopted.

During low water in the Yuba, the plan was for some years effectual in providing a means of escape for the sewage, but during the high stage of the river the outlet of the sewers was under water for many feet, and the river itself backed through them into the town. This was remedied, in part, by a flood-gate, which kept the mouth of the sewer closed for a considerable portion of the year. At the present time the sewer outlet is said to be four or five feet beneath the debris and sand by which the river has been gradually filled up.

No information was obtained as to the existence of traps between the bath-tubs and kitchen-sinks and the drains.

The filling up of the river bed by debris from the mines has rendered the present plan of sewerage entirely inefficient, and it is said to be in contemplation to do away with the two large brick sewers and substitute smaller and more superficial surface drains. The evils attendant upon these surface drains are evident to every observer; yet they must inevitably arise as a result of the hot sun of summer upon the foul water they contain, their wet but drying borders, and the decomposition continually going on in the wooden drains themselves. In fact, there is said by Dr. Caldwell to be a very evident connection between the character of the drains in some localities and the sickness prevailing there.

There is a manifest impropriety, too, in permitting the drainage of a city of seven thousand inhabitants, with its hotels, foundries, and factories, its stables and butcher shops, to run into a river which, though not itself used for domestic purposes, empties within a distance of sixty miles into one that is so used by a large population. The right of self-protection is a law universally recognized and observed, but it is a right which should not be exercised to the injury of an innocent and unsuspecting public. We have no right to assume that no detriment will result to the health of those ultimately using such water, even though the sewage it contains be vastly diluted, and though it has been agitated and exposed to the oxidizing properties of the water and the air through a course of fifty or sixty miles before reaching the populous city of Sacramento. Such an assumption is in direct variance with the opinions of those who have most attentively studied the subject, and the practice can be followed only by a direct violation of the law relating to the pollution of rivers.

Doubtless engineering skill is capable of suggesting a remedy. If not, the irrigation system applied to the extensive area now covered for many feet in depth by the unprofitable debris washed down from the mining regions, would afford relief, and become the means of enriching many acres of land now unfit for cultivation, and making them to teem with rich harvests of golden fruit.

Privies are in general use by the residents in all portions of the city, some of the vaults being cemented and connected by pipes with the indoor water-closets. Most of these are trapped, and many of the privies ventilated by the Eastmond and Cottier plan. They are usually emptied annually, or as occasion requires, by the odorless excavator, and what is more objectionable than anything yet stated, their contents are said to be generally, though not always, thrown into the Yuba River.

THE HYGIENE OF DWELLINGS.

Among the objects which most demand the attention of the sanitarian, and which are rightfully considered to be essential to the comfort and health of the individual, is the construction of the house in which he lives. A man may pursue his daily avocations amid filth the most disgusting, and surrounded by insanitary conditions of the most offensive character; he may breathe the diluted vapors which circulate and diffuse themselves in the atmosphere, but they come to him in a state so attenuated as to be, in a great measure, innocuous. It is well known that laborers upon sewers and cess-pools may, and often do, prosecute their work of repair or of removal of their foul contents, day after day, inspiring the fetid gases of which they are the source, without apparent discomfort or injury. But it is equally true that the case is far different when these same gases enter the dwelling in which an individual lives and concentrate themselves within the narrow inclosure of the bed-chamber. There are certain gases, too, and vapors, which proceed from man himself, the product mainly of the vital function of respiration, but to a certain appreciable extent of exhalations from the body, which, under similar circumstances, may undermine his health or even occasion serious disease. This is especially true of the vapors and other substances which emanate from the bodies of the sick. Of reason, then, the hygiene of the dwelling may be regarded one of the most important subjects of inquiry. Men, everywhere throughout the wide range of civilization, have exhibited a certain degree of pride in the construction of the dwelling—the home. With rich and poor alike, the predominant idea has been the security of what each one in his different sphere has come to consider *comfort*. In the attainment of this one prominent and laudable feature, another sentiment is exhibited by the rich, and individuals vie with each other in the display of beauty, elegance of design, and costliness of structure; while the poor, struggling with the decrees of a hard destiny, are compelled to content themselves with the humble cottage which poverty bestows. Both may attain a certain degree of *comfort*, and be content. Yet in this strife for comfort, this ambition for display, how few ever pause to think of that which is the very essence of all that is worth striving for—health. The mansions of the rich are often no better in this respect than the cottages of the poor—nay, sometimes worse; and it frequently happens that the peasant in his humble cabin by the hill-side, or amid the tall pines which chant their solemn music in the breeze, is more to be envied for his share of this one essential than the prince in his palace. This can scarcely be considered surprising when we contemplate the ignorance and carelessness so often manifested in the construction and management of what are commonly designated *modern conveniences*, and the gross neglect of the trapping

and ventilation of house-drains. The dangers arising from such sources affect especially the dwellings of the higher classes of society, for the poor are usually compelled, by the force of circumstances beyond their control, to be satisfied with more primitive and simpler arrangements.

The circumstances proper to be here considered, under the general head of the hygiene of the dwelling, are the site, the construction, and the arrangements for the disposal of sewage and excrementitious substances. Among the first considerations to be attended to is the selection of a suitable location. This, it is true, is not always within our control, for the business relations of life, commercial interests, or motives of economy, will often compel the adoption of a locality which a strict respect for sanitary precepts would scarcely justify. In discussing this question, therefore, we are under the necessity of considering what should be—what a prudent regard for health requires, leaving each one to approximate it as closely as circumstances will permit. The location should be *dry*, naturally, or susceptible of being made so by drainage. Some of the evils resulting from dampness of soil are familiar to every one. Every one recognizes its agency in the causation of catarrhal affections, rheumatism, and the like. But it is not so generally known that from such sources more serious diseases—certain scrofulous developments, more especially pulmonary consumption, not infrequently arise. The investigations of Dr. Bowditch, of Boston, Massachusetts, already alluded to in a former part of this report, and of Dr. Buchanan, of England, leave no room for doubt upon this subject. Indeed, among the principles which lie at the foundation of sanitary science, this question of soil dampness is of the most positive and unequivocal character, surpassing almost all others in the magnitude of its evils and the certainty of its results. “Medical opinion,” says Dr. Bowditch, “as deduced from the written statements of resident physicians in one hundred and eighty-three towns, tends strongly to prove, though perhaps not affording perfect proof, of the existence of a law on the development of consumption (in Massachusetts), which law has for its controlling idea that dampness of the soil in any township or locality is intimately connected with the prevalence of consumption in that township or locality.” The English reports speak even more positively upon this subject, showing a reduction of the death rate by consumption, as the result of *drainage* of wet soils, in one town, 32 per cent.; in another, 17 per cent.; and in a third, 49 per cent.

Indeed, it has recently been rendered probable by the experiments and observations of Surgeon T. J. Turner, United States Army, that moisture, when excessive in the atmosphere, is not alone detrimental in the manner commonly supposed, but that it is in reality an impurity, increasing the amount of carbonic acid, diminishing the exhalations from the skin and lungs, and limiting excretion. It is stated that life cannot endure for any length of time in an atmosphere saturated with moisture at a temperature of 90° F. to 100° F. When, therefore, necessity compels the selection of a building site upon damp soil the defect should be remedied by deep drainage; and where the topography is such as to make this impracticable, as upon low and level lands, such as are met with in many of the valleys of California, without outfall for the underground water, cellars should be avoided, and the dwelling erected sufficiently above ground to

provide for free circulation of air and ventilation between the latter and the lower floor of the house. Indeed, cellars, in almost all soils, are a source of dampness, receptacles for moisture, and become the frequent cause of disease. They should at least be well ventilated—better, drained from beneath, or lined, upon the floor and sides, with good cement.

Made soils—those made from rubbish, the sweepings from streets, and other materials containing much animal and vegetable matter liable to decomposition—should also be avoided. In some cities, or in special localities in cities, a high rate of mortality from cholera infantum during the summer and autumn months has been attributed to this cause alone. Its influence in the production of malarial fevers, also, is familiarly known.

Another important suggestion as to the selection of a building site, is its *exposure to the sunlight* and to the winds—that is, to a free circulation of air in and around the dwelling. The effect of the former upon the growth and nutrition of the body is well known, as is also that of the latter as a means of ventilation. The frontage of the house, therefore, taken in connection with the usual course or direction of the winds, deserves consideration. As a rule, a southern frontage, even in the valleys of California, is to be preferred. There is a freer access of the sunlight, and the prevailing winds being from this direction, the construction of the building can be so arranged as to afford a free and uninterrupted circulation of air. Viewed in the same connection, the planting of trees and shrubbery becomes a measure of more or less importance, according to the meteorological features of the climate. Apart from the beauty and attractiveness of such vegetation—its æsthetic effect—it exercises an efficient and salutary conservative influence, especially in a warm climate. Trees absorb moisture both from the soil and from the atmosphere. They exercise a lowering effect upon the temperature in consequence of the constant evaporation going on from their foliage; they cool the ground by shutting off the rays of the sun; they also check, to a very considerable extent, the velocity of the winds; and serve frequently to obstruct or intercept malarious currents. Yet it often happens that the cultivation of trees is carried to an imprudent excess. They exclude the sunlight; the free circulation of air is impeded and it becomes stagnant and unhealthy. This extreme is frequently observed in the valley cities of this State, where considerations of health are sacrificed to the beautifying and adornment of the home. "The sun's rays," says Doctor Donaldson, of Baltimore, "not only prevent dampness and mustiness, but they purify the atmosphere by destroying organic matters."

The materials of which a dwelling is constructed are not altogether a matter of taste or fancy. Whether we regard the long hot season of the central valleys of California, for example, or the almost equally long rainy season, it is believed that frame buildings are generally to be preferred. Though warmer in summer than those of brick, they are rapidly cooled as evening approaches, while they are drier and more conducive to health in winter. Brick structures, unless built upon an elevated, well drained site, or protected by a layer of some impervious material above the foundations, take up moisture from the soil and are apt to be damp, while the rains of winter, falling upon their surface, are absorbed in considerable quantity. They are consequently often damp, and this objection is not entirely removed

by the usual method of inside plastering. Outside plastering or cementing, or even painting, however, affords partial protection; or the walls may be double or hollow, with ties at suitable intervals to secure strength.

But there are strong objections to the use of damp-proof paints, or cements, upon the exterior of a house. They succeed, indeed, in keeping the dampness from without from entering the house, but they securely imprison that which arises from various sources within. The condensation of the latter renders the walls damp—a condition of things which the Professor of Hygiene at Munich compared to the wearing of India-rubber clothing. “Both protect from exterior wet, but as they impede the exchange of air between the inside and outside, they generate a wetness in the interior—upon the skin, or upon the walls of the room.” (Eassie, Sanitary Arrangements, etc.)

The hollow walls just spoken of, properly constructed and well tied, are doubtless the better reliance.

The vitrified stone-ware has also been successfully used as a single *damp-proof* course above the foundation of a building—tiles or slabs being made an inch or two in thickness, and perforated for purposes of ventilation. It is a significant fact, in this connection, that dry bricks will absorb not less than one-third their weight of water.

But quite as important, in a sanitary point of view, is the *construction* of the building as respects its warming and ventilation, its drainage, and the arrangement of its sinks and closets. These are, indeed, the chief factors upon which the healthiness of our dwellings depends. To these subjects the remainder of this paper will be devoted.

The first two of these essentials are intimately connected, for the means provided for the former are such as are often made available for the latter. The old-fashioned fire-place, for example, with its chimney, affords, under certain circumstances, an effective means of ventilation. The current of air, and consequently the extractive power of the chimney, depend in part upon the degree to which the former is heated, or in other words, upon the size of the fire; a constant current is set up from the inlets of air towards the fire-place, and, according to some authorities, another movement is set up along the ceiling, down the walls, and along the floor towards the chimney.

In this connection, or at least in the Sacramento Valley, with an average velocity of the air in summer of nearly nine miles per hour, and of about eleven miles in winter, it is usually not difficult to obtain ample and proper ventilation by a suitable arrangement and construction of the windows. Whatever may be the plan adopted, the important points are to avoid a *draught*, and to keep the air of the room in such a condition that there shall be no excess above the normal amount of carbonic acid—probably about .06 per cent. The regulation of this is easy in the private dwelling as compared with the difficulties encountered in hospitals and some other public buildings, and need not be dwelt upon. “As a rule,” says Denton (Sanitary Engineering, p. 103), “it may be stated that dwellings built upon a dry soil, which maintain in their several apartments the full amount of air required for animal respiration and the combustion of fuel used in each apartment, and which is generally gained by properly divided doors, windows, and fire-places, will maintain

their [the proper] standard without any special efforts at ventilation."

Among the devices for warming the apartments occupied in winter, none are so simple and, in general, so agreeable as the old-fashioned fire-place. In our climate, at least in the valleys and along the coast, where extreme cold is never felt, even the objections commonly urged against it in an economical point of view do not obtain to any extent, though open to the inconvenience of warming the room unequally, etc.; yet it may be readily seen that, under certain circumstances, it may be productive of evil. The air of the room being heated by reflection and radiation is unequally warmed; it is warm near the fire, while a current of cool air, established from without around the windows and beneath the doors, keeps more distant portions of the room cold. Various contrivances have been adopted to obviate this difficulty, as, by the construction of the grates so as to increase their radiating power. In many well-constructed dwellings the method of heating by means of hot water pipes, or pipes through which steam is circulated, is now adopted, the readiness with which heat may be conveyed to any part of the house, and the uniform temperature capable of being secured, rendering these methods especially convenient. However valuable such an arrangement may be, it can never entirely supersede, for ordinary purposes, the open fire-place or the open grate. The objections to the latter have been removed by the construction of an air chamber on the back and sides through which external air passes into the room.

But there is no part of the dwelling, no special feature in its arrangement, more interesting or essential than its *drainage*. The word *drain* is here used to signify that system of pipes or ducts by which the waste water, slops, kitchen refuse, suds, and the contents of water-closets are conveyed away to the receptacle assigned to the purpose—in other words, to the house sewer, as subordinate to the main or public sewer. The latter, where a system has been established, is a matter which concerns all who connect with it—it is commonly supervised and regulated by the public authorities; the former concerns distinct and often isolated individuals and families and influences the health and comfort of the household.

Commonly the drainage of the house comprises two systems—one connecting with the main sewer by which the waste water of the kitchen and of baths is carried off; another, designed especially to convey the contents of water-closets to their destined place.

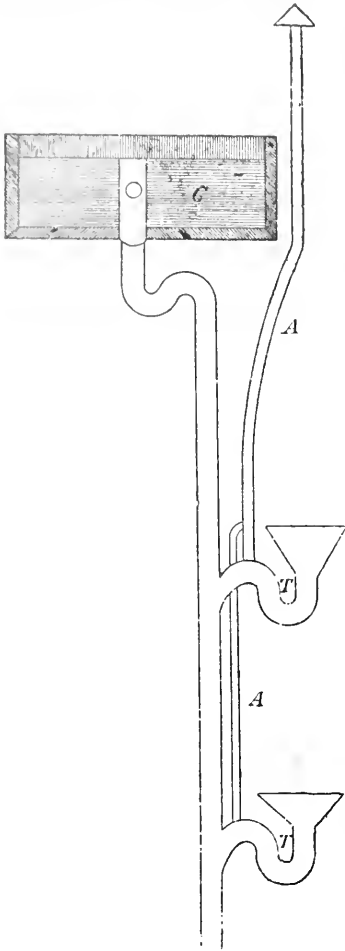
In the arrangement and construction of both, the chief concern should be to keep the gases which arise from entering the house and poisoning its inmates. No fact in sanitary science is now better established than that sewer gases do arise from the sources indicated, and that they do, without proper precaution, find their way into dwellings and become the source of disease. The records of medicine are replete with the evidences of these facts, and the recent investigations of sanitarians in this country and in Europe have placed them out of the reach of successful contradiction. It is indispensable, then, that all communicating drains should be properly constructed. The materials of which they are composed should be sound, non-porous, and the drain should be laid with a *fall* or slope sufficient to carry off, without obstruction, the materials discharged into them. Glazed stone-ware pipes are generally considered the best, being durable and so smooth upon the inside as to

facilitate the easy and uninterrupted passage of their contents; and they should not be too large, thereby diminishing the rapidity of the current through them. In general, pipes of four or six inches diameter, with a fall of one and a half or two feet per hundred, will suffice for an ordinary house drain. They should be properly *trapped and ventilated*. If the ventilation of the main sewers of a city is necessary for the protection of all who form local connections with them, surely it is equally important that the communicating drains leading from isolated dwellings should be provided with a ready means of escape for the gases of decomposition arising therein. The latter precaution is, in fact, of even greater importance in consequence of the frequent imperfection of the sewers of cities, the inadequate ventilation provided for them, and the absence of any intelligent supervision over them. They are often ineffectually flushed, become foul, the gases generated within them must find an outlet, and none so accessible as that which, under the arrangement often adopted for the communicating drains, finds its exit into the bath-room or living rooms of the dwelling. The higher the temperature of the air of the room as compared with that of the drain or sewer, the more rapid and certain the inflow of polluted air.

The construction of a drain with a view to its efficient ventilation will depend in some measure upon the uses to which it is to be put. In many cities, with ample water facilities and a suitable outlet for the final discharge of sewage, drains are adapted to the conveyance not only of the refuse from the kitchen and bath-room, but also for the contents of the water-closets, and, wherever practicable, the system is to be recommended. Privies and cess-pools, with their abominations, their dangers, and their inconveniences, are thus avoided. But in other towns, and in isolated dwellings, especially in the country, such a disposition of the excremental refuse from the water-closet is impracticable, and the CESS-POOL or VAULT is resorted to as a recognized, though necessary, evil. To reduce the dangers arising therefrom to the minimum they should, as previously stated, be well cemented so as to be water-tight, arched over, and ventilated at the top, and sufficiently small to require emptying at least once or twice a year, and frequent disinfection. As commonly built they are mere holes, loosely bricked or boarded up in such a manner as to permit the percolation of their liquid contents into the surrounding soil, thence to flow, it may be, into the well from which the drinking water is supplied. Too many instances have been recorded of the dangers arising from these sources to permit a doubt of their reality. However these conditions may be—whether intended to convey the contents of water-closets or of sinks or bath-tubs, or a mere kitchen drain leading, as is often the case, to an open hole dug in the ground near by, whether designed to connect with the main sewer of a city or with a cess-pool, the drain must be *ventilated*.

Various plans have been adopted to effect this purpose. One of the most efficient—the only certain method—is to be found in the construction of the soil-pipe, its continuation above the roof of the building, thus forming a ventilating shaft, which should be without abrupt or angular curves, and of equal diameter in its entire length. This diameter should not be less than that of the trap or traps it is designed to connect with it during its course. Denton and others advise, also, the ventilation of the closet-trap as well as the soil-pipe,

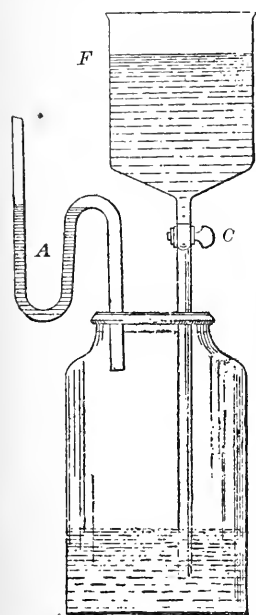
which may be readily effected by a small pipe extending from the upper curve of the trap to the ventilating tube above the entrance of the trap into the soil-pipe.



This is esteemed to be particularly necessary when two or more closets are connected, one above the other, as upon the different floors of a house with a single ventilating tube, for as shown by Latham (*Sanitary Engineering*, p 402), water flowing down the latter from above is likely to untrap all the closets below on the same line of pipe, by virtue of an induced current of air which, entering by the several traps, passes along with the water and creates a vacuum behind it. The attachments of separate ventilating pipes, as shown in the cut, taken from Latham, at the top of each trap, will correct the evil. Here O is the overflow pipe from the cistern C; T the trap or traps; and A the ventilating pipes inserted at the tops of the traps. "If ventilation is used in this way," says Latham, "the effect of the induced current still remains, but air can enter the drain, and the traps will remain intact." For the further purpose of preventing the syphonage of pipes in the manner shown, the recent ingenious invention of Mr. Morey has been much used of late in California. It is not intended to supersede the use of a properly constructed air pipe, but simply as a substitute in buildings already erected and in which the former has been neglected. "It is soldered," says the description given, "on traps already in use at the highest part of the bend. Any tendency of the water passing through the discharge pipe to create a vacuum causes the valve to lift, and

the air rushes into the pipe, destroying the vacuum and preventing the trap being drawn dry. The water ceasing to flow, the valve drops by its gravity into its seat, forming an air-tight joint preventing the escape of noxious vapors." In carrying the ventilating pipe above the roof of the house care is to be taken that it does not terminate near the windows, or even the flue of a chimney. In certain directions of the wind, or under certain conditions of temperature, incurrents into the house may be established, which will carry with them the gases but just escaped from the soil-pipe. No dependence whatever should be placed upon the water seals of soil and waste-pipe traps, nor on that remaining in the basin of the closet during the intervals of its being used, for, though they are capable of intercepting, to some extent, the passage of sewer gas, they afford only a slight resistance to the strong pres-

sure by which the latter is often forced or drawn into a house. They can never be considered safe without ventilation of the waste-pipe.



They are liable to be unsealed by slight causes—by a difference of temperature between the air in the sewer and that in the house; by the formation of a vacuum when large bodies of water are poured down through the waste-pipe; by the sudden accumulation of water in the sewer as by rains; by evaporation, when not frequently used, and by other causes. How little force is needed for the purpose of unsealing such traps may be understood by the fact that “a seal of three inches deep offers resistance to the passage of air equal only to a pressure of two ounces for five square inches.”

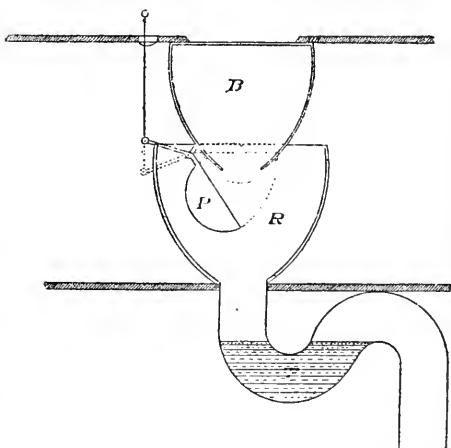
A simple experiment, originally suggested by Latham, but frequently referred to, will explain at least two ways by which the water-seal of traps may be displaced:

First—The expansion of the air under an increase of temperature.

Second—The increase of pressure and consequent unsealing of the trap, when the quantity of water is suddenly increased in the sewer.

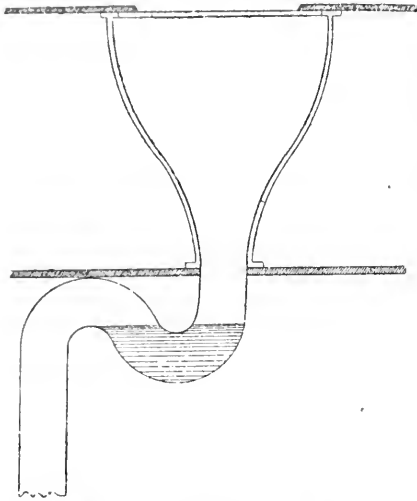
If water be placed in the bent tube representing an ordinary trap at A, and the warm hands be made to grasp the glass jar, the air in the latter will be so expanded as to throw the water out of the tube. On the other hand, if the water contained in the funnel F be suddenly allowed to flow into the jar, by turning the stop-cock C the water in the trap A will be similarly forced out. The cut is taken from the excellent work of Geo. E. Waring on the Sanitary Drainage of Houses and Towns.

In the course to be pursued for preventing the escape of sewer gas into the house, something will depend upon the form of water-closet used. These are of various kinds. One of the most common is the pan closet. It consists of a porcelain basin B resting upon and entering into an iron receiver R by means of a pan. When the valve P is raised, the contents of the basin pass into the receiver and thence into the branch leading to the soil-pipe, having a trap. This trap contains, or is supposed to contain, water, and constitutes one seal; the water in the bowl above the pan serves as a second water-seal. This closet is figured in the accompanying cut taken from the report of the Board of Health of Brooklyn, New York, 1875-6.



One of the most serious objections to this and similar closets is that the foul air from the sewer and soil-pipe must inevitably escape when-

ever the pan is lowered and the water allowed to rush through. The volume of water displaces an equal volume of air, and the readiest avenue of escape is into the room. In addition to this, the receiver itself, becoming fouled by adhering masses of matter discharged into it, proves to be the source of foul air ready to escape when the pan is lowered. An examination of one of these closets, after being used for some time, will reveal the presence of such foul accumulations, not only in the iron receiver but also in the lead trap leading therefrom. When these closets are used a ventilating tube passing from the receiver into the soil-pipe, upon the principle suggested by Denton, becomes indispensable; but even this precaution does not fully remedy the evil.

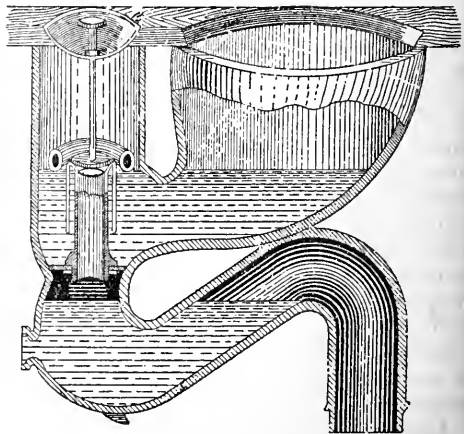


The common hopper or syphon closet is one of the cheapest, and in the opinion of some a more desirable closet than that last described. It is of one piece, made of porcelain, and having a perfectly smooth surface, is little likely to retain the matters passing over it. It terminates in a trap containing water, from which the branch is extended to the soil-pipe. When the latter is well ventilated, as indicated above, and when the supply of water for flushing the trap is abundant, this closet is probably less objectionable than any other cheap closet now in general use. The cuts for this and the next closet are taken from the report of H. A. La Fetra,

Secretary of the Brooklyn Board of Health.

As a general rule the best closets, though costing more in the beginning, are ultimately the cheapest. They are more perfect in their construction, less liable to get out of repair, more cleanly, and better adapted for the exclusion of the gases of decomposition.

One of these is the "Jennings Closet," which, as recently improved, probably presents the most perfect conditions for safety. It is one piece of glazed earthenware from the seat to the soil-pipe; the whole quantity of water necessary for flushing is contained in the bowl just underneath the seat, and by simply lifting the valve, it is carried suddenly and forcibly away through the trap into the soil-pipe and drain. The volume of water is so great, however, that the perfect ventilation of the soil-pipe is absolutely necessary to prevent the foul air in the latter, displaced by the water,



from being forced up into the house. This secure, it is all that can be desired. Instead of the *hollow* plug commonly used, which was thought liable to allow the effluvia generated in the trap to pass through it into the house, it is understood to have been recently improved by the substitution of a solid plunger and a trapped overflow from the bowl.

Another form of closet recently introduced is the "Twin Basin Closet," by Pierson, in the arrangement of which much reliance is placed upon the deep water-seal in the basin, the solid plunger with its rubber flange by which the discharge of water from the bowl and the entrance of air from below are prevented, while the overflow pipe, which is also of earthenware, and a part of the closet itself, carries the excess of water from the top of the bowl down to and below the plunger. The valve of this closet is self-acting, acted upon by a float which rises and falls with the depth of water in the basin.

The following cut taken from the report of the Brooklyn (N. Y.) Board of Health, 1875-6, will explain the peculiar features of this closet: A represents the bowl; B the overflow; C the plunger; D

the valve; E the float. Various other forms of water-closets have been introduced; those which, when in use, are odorless, properly trapped and sealed against the ingress of sewer air, simple yet durable in construction, and provided with an arrangement for rapid and complete flushing or washing out of the closet and its trap, being the only ones to be recommended, even though the most expensive.

Defective water-closets, liable to get out of repair, poorly sealed, poorly trapped, poorly flushed, and in-

efficiently ventilated, have been compared to defective boilers. Death or injury, though not so sudden, perhaps, is scarcely less certain.

The location of the water-closet is a matter of some importance. It should never be placed in the sleeping apartment nor in apartments directly opening therein, such as closets, dressing-rooms, and the like. Authorities advise that, where there is no danger from the frost, it should be located outside the line of the house, as a projection from the latter; but, under any circumstances, it should be placed in a room closed from the other rooms of the house by an intervening passageway or lobby, and having one or more windows opening to the outside. With a properly constructed water-closet, perfectly arranged, efficiently acting, well ventilated, and suitably cared for, these precautions may not be necessary; but the dangers of slighted and imperfect plumbing, of neglect, or of careless management, are too great to be overlooked.

The above remarks concerning water-closets are, of course, based

upon the condition of a sufficient supply of water. It should be ample for the water-seals of the closet basin and the trap, and for flushing when required; constant, not intermittent, nor subject to interruptions. To fulfill these purposes, it is advised to erect a reservoir upon the roof connected with the common source of water supply, having an overflow-pipe and regulated by a float, thus avoiding the risk of failure from breakage or other derangement to which the machinery of the water-works of a city are occasionally subject; but it is essential, when the water-closet is supplied directly from the pipes relied upon for water for culinary and other household purposes, that there shall be no danger of the contents of the pan or the foul air above the trap being sucked back when the water falls, as it is constantly doing from the opening of cocks along its line, or between the closet and the water mains.

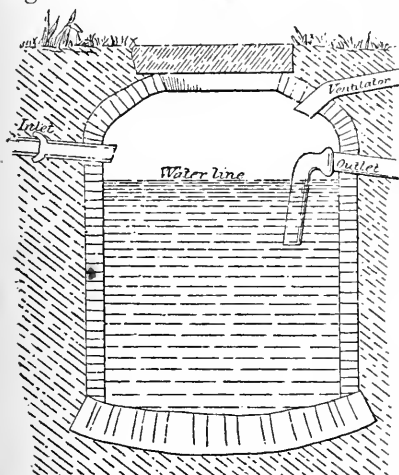
Almost equally important for the security of the dwelling against the inflow of sewer effluvia, is the arrangement made for the discharge of the waste water of the house—that from the bath-tubs, the stationary wash-basins, and from the kitchen. Sewer air may enter in through the discharge-pipes from these sources not less than through the water-closets. In many cases in fact the kitchen drain is the only one supplied, and, as in the case of water-closets, whether the contents are conveyed to a cess-pool or to drains connecting with town sewers, there is no escape from the necessity of its ventilation and proper construction.

We often see in country houses, and sometimes even in sewered cities, the waste water from the kitchen emptying its contents upon the ground just outside the house, or if allowed to open into a drain, it is a small, unsatisfactory, leaky, often open drain, which conveys the materials a short distance to some point in the yard, where it is equally dangerous and equally exposed to decomposition. The odors from these sources are generally offensive and disgusting, and the emanations a fruitful source of disease. Perhaps, and it not unfrequently happens, a shallow well is near by, suitably located to receive the fluids directly from the surface or by percolation through the soil.

In other better arranged places a cess-pool is provided, as before explained, loosely bricked or boarded up, permitting free percolation into the surrounding soil. The effect of a multitude of such cess-pools, one for example in every building lot of a crowded town, continuing its work of contamination year after year, may well be imagined. It is not difficult to see, too, to what danger the drinking water is subjected when reliance for a supply must be upon wells so located. That cess-pools are an evil few will deny; but unfortunately they are too often unavoidable, the absence of any facilities for good drainage making them the only resource. The dangers to which they give rise can be avoided only by rendering them perfectly watertight, and by relieving them of their contents as often as the accumulation requires. With these precautions and proper ventilation the cess-pool may be elevated in the scale of utility, or at least of evils tolerated, and deprived of its greatest dangers. In any case the waste-pipe from the kitchen sink should be properly trapped, and it would be better if the trap were provided with a screw, as if often done, by means of which the solid particles collected may be cleaned out without the necessity of forcing them into the drain. If to this a ventilating tube passing from the waste pipe just outside

the house up to or above the roof be added, there would be yet further protection against foul air from the drain or cess-pool.

In many cities, as stated above, where the system of sewerage is efficient, both the "slops" from the kitchen and the effete contents of water-closets are permitted to flow into the main sewers; in others, the former only; but however this may be, discharge-pipes, as just stated, should be well trapped inside the dwelling, that is, under the sinks; and it is advised by the best authorities that, when communication is with a connecting drain or sewer, it should not be *direct*, but through the intervention of a gully or grease-trap, with grated or tight cover, for the purpose of intercepting all solid substances capable of obstructing the drain. The principal utility of these traps, however, is to permit the grease constantly discharged from the kitchen to congeal and float upon the surface, the liquid portion passing out from below. Common experience has shown that few things



which pass from the kitchen sink into a communicating drain are so liable to choke it as the steady accumulation of grease. The construction of such a trap becomes, therefore, a matter of economy. In the words of Waring: "With a proper grease trap, a four-inch drain will furnish an ample outlet, while without such grease trap no drain can be relied upon to be permanently effective."

The writer, in reconstructing the drain from the kitchen sink at his own residence, a few months since, upon the principle here recommended, found a six-inch glazed earthenware pipe which had been in use about five years, almost completely choked with accumulations of hardened grease and soap.

Various forms of these traps have been devised. The accompanying, taken from Waring (*Sanitary Drainage*, page 195), has been found to answer well.

The trap is made of cemented brick-work, and so situated as to receive the grease from the sink while still warm, lest the waste-pipe itself should eventually be obstructed by it. The ventilator is to be carried above the roof of the house. Its construction will be understood by an examination of the cut.

The principles upon which the above suggestions have been made are believed to be in accordance with the views of the best modern authorities. The details are for the most part simple, easy of construction, sufficiently inexpensive for any one able to build a house, and, if adopted, may minister to the prevention of disease and the saving of life. How many lives have been lost by inattention to these subjects there is no present means of knowing; but the records of medicine, and especially of modern sanitary science, are replete with demonstrations of the danger of their neglect. The suggestions thus briefly made are not applicable alone to the houses of a city with drains communicating with public sewers; they apply as well to the country home, to the isolated dwelling—to all habitations in the con-

struction of which comfort, cleanliness, and pure air have been considered worthy of attainment. The prevention of disease is one of the chief ends of sanitary investigation, not as applied to the public alone, not alone as reaching great masses of men, but as affecting individuals. The former are too frequently seen to suffer neglect, through ignorance sometimes, through prejudice sometimes, sometimes from mistaken motives of economy. In defective and unventilated sewers float the germs of disease which public policy has been too short-sighted to guard against, and against which the only protection is in individual action. A man's house, it is said, is his castle, which it is his privilege zealously to guard against the intrusion of foes; yet how few pause to reflect that among the enemies which most threaten their security, none are more insidious or more to be dreaded than those which it is one of the objects of sanitary science to point out, but to which, it too often happens, the avenues of approach are all unclosed.

In what has been said upon this subject no attempt has been made at originality. It has been a matter of observation that much ignorance prevails upon the important questions of drainage and the arrangements and method by which it is to be effected, especially as applied to the dwelling. The results of this ignorance have been plainly yet sadly displayed in the course of professional duty, where the home has been pitilessly invaded and bright and vigorous manhood stricken down as the forfeit of unconscious neglect.

Many excellent and exhaustive treatises have been published upon the subjects here briefly reviewed, but these reach only a few; they are usually inaccessible to the masses; and it is with a view to reach these, and afford some useful hints upon what intimately concerns the health of every individual, that it has been deemed appropriate to give them a prominent place in the report of the State Board of Health. Respectfully submitted,

F. W. HATCH, M. D.,
Permanent Secretary State Board of Health.

The following analysis of the water used at the Napa Asylum for the Insane was received too late for insertion in the proper place. Mr. Hanks, the chemist, says:

I find this water to be remarkably free from impurities, as the following statement will show: The water is transparent, free from color, containing but a small quantity of suspended matter, which quickly subsides when the water is allowed to stand; it is very slightly alkaline, and a portion of the fixed ingredients is in the state of bicarbonates.

A microscopic examination shows the suspended matter to be principally vegetable, and the forms revealed are those common in good water when it is allowed to stand for a time in reservoirs or tanks.

The total fixed constituents in this water were found to be 11.08 grains in one United States wine gallon, which is equal to 13.3 grains in one Imperial gallon, 0.190 grammes to the litre, and to 19.0 parts in 100,000.

The hardness is equal to 3.7 grains of carbonate of lime in an Imperial gallon, or 5.29 parts in 100,000. From organic matter, both in the form of ammonia and albuminoid matter, it is singularly free, showing only traces.

The constituents found, and which it was thought unnecessary to determine quantitatively, are as follows: Carbonic acid, chlorine, phosphoric acid (trace), boracic acid (trace), iron, lime, silica, soda, and magnesia.

As the result of my examination I have no hesitation in pronouncing this water to be good and in every way fitted for domestic use. It is remarkably soft, free from sulphate of lime, contains only a small quantity of fixed ingredients, and is free from mechanical impurities, whose properties render it in every way suitable for manufacturing purposes.

[SEAL.]

HENRY G. HANKS.

APPENDIX.



[While the Board of Health approve generally of the papers presented by contributors to this Report, they cannot be considered responsible for the opinions expressed.—*Board of Health.*]

ON THE DANGER FROM PESTILENCE IN CALIFORNIA.

BY HENRY GIBBONS, SR., M. D., PRESIDENT OF THE STATE BOARD OF HEALTH.

There are a number of diseases which appear to be carried from place to place by commerce and travel, and the possible importation of which in California is a cause of apprehension and alarm from time to time among our people. These are Yellow Fever, Malignant Cholera, Small-pox, and Leprosy. To what extent we are in danger from the introduction of these diseases from abroad, appears to be a fit subject for presentation in the report of the State Board of Health.

1. *Yellow Fever*—There is nothing in the laws governing the movements of Yellow Fever which would prohibit absolutely the introduction of the disease, and its prevalence in the centers of population, in the interior of the State. But the barriers to its introduction are almost insurmountable. Two methods of transportation are recognized, viz., persons diseased, and fomites or infected articles. These could enter only by ship or by the transcontinental railroad. Entrance by ship involves a voyage round the Horn, which would be, in itself, disinfectant. Even if it were not, and if vessels should arrive with the germs of the disease on board, our ocean climate would not admit of their germination. Under these circumstances there is no ground of apprehension that Yellow Fever will invade our State through the gates of ocean commerce.

It would be possible for an individual, coming from an infected district in the East, to bring the seeds in his system, so that the disease might be developed after his arrival in California. The infectious germs might be introduced still more readily through the agency of fomites. But the history of Yellow Fever shows that something more than all this is requisite for its spread in any given locality. A certain epidemic influence is necessary—a poisoned condition of the atmosphere or of the place. The range of this epidemic influence, within which the disease is liable to spring up, varies from year to year. In some years it is scarcely perceptible, and then our southern ports are nearly or entirely exempt. Sometimes it operates with so little force as to be restrained and almost disarmed by sanitary measures. At other times it assumes great virulence, and cities are devastated in spite of every human effort. Occasionally it extends far beyond its ordinary geographical limits, as it did in the latter part of the last and the early part of the present century, when the scourge almost decimated the population of Philadelphia, and even invaded the ports of New England. Such aggravations of the malign influence are likely to recur in the year following, and sometimes in

the third year. We notice this fact or law in the recent history of the disease in the Atlantic States.

If Yellow Fever, in one of these exceptional aggravations, should extend up the Valley of the Mississippi and invade the States on the line of the Union Pacific Railroad, gaining a foothold in the cities and towns of Missouri, and Kansas, and Nebraska, there would be ground for apprehension on our part. But until such a demonstration takes place, we have nothing to fear. Even then the sanitary measures which would be adopted by the State Board of Health, in coöperation with the civil authorities and the officers of the railroad, would, in all probability, ward off the evil. Such a case, however, is hardly supposable. The disease is not in the habit of leaping overland from place to place. It requires time to travel. It never appears until late in the summer in the extreme south, and before its epidemic wave could extend far towards the northwest it would be arrested by the frosts of the northern latitudes.

2. *Malignant Cholera*—So far as importation is concerned, Malignant or Epidemic Cholera may come upon us from various directions—from Asia, from the Pacific Coast southward, and overland. From Asia we need not fear it. The law of its extension prohibits its travel eastward. Hitherto, from its first invasion of America in 1831, its course has been westward, and its advent on our continent has always been from Europe.

Like Yellow Fever, Epidemic Cholera requires for its extension something more than human travel and commerce. There must be a certain epidemic influence in order for its migration. Having a permanent home in India, it travels abroad only under cover of that mysterious influence. It has been introduced in California several times, but has propagated itself only once, viz., in the autumn of the year 1850, when its introduction was attributed to immigrants crossing the plains. But the disease prevailed at the same time, or, rather, earlier, at Acapulco, when there were no immigrants to bring it, and no vessels arriving with it on board. The choleraic *cloud*, so to speak, had gradually spread across the continent, and established on the Pacific Coast the peculiar climatic or other conditions, without which the disease was incapable of propagation.

In the summer of 1850, the writer came from Panama to San Francisco on the steamer Republic, stopping at Acapulco and remaining there three days to procure coal and provisions. The Cholera was then prevailing there with great fatality. This was about the middle of August. The passengers, some four hundred in number, had unrestricted intercourse with the shore, and most of them spent a great part of the time in and around the town. At the request of the Alcalde I visited a number of the patients, and being familiar with the disease, could not be mistaken in its identity. Notwithstanding all this exposure on the part of passengers and crew, not one of them contracted the disease. Had they remained there a few days longer it might have been different. The seeds may have been carried into the ship, but as the vessel immediately passed away and out of the epidemic cloud they were not developed.

The same great morbid wave which crossed the continent from the Atlantic side to the Pacific Coast, at Acapulco, spread itself to the northward also, and reached California a few months later, apparently traveling with the overland immigration. A number of mining camps in the northern section of the State were invaded by the Chol-

era in the summer and early autumn, and the City of Sacramento suffered terribly by its visitation. But although there was free and constant intercourse between San Francisco and the interior, at least two months elapsed before its appearance in the metropolis. Here it prevailed mostly in November and December, disappearing about the end of the latter month. The climate of San Francisco was unfavorable to its extension, the mortality from it being only one hundred, whilst in Sacramento the number of victims amounted to a thousand.

In subsequent years Cholera was several times brought into San Francisco by steamers and sailing vessels from the southern coast, and though no especial care was observed to guard against it by quarantine or otherwise, in no instance did it communicate itself to persons on shore. In the summer of 1854, a steamer from Panama brought six or seven cases, which were immediately carried to the City Hospital, then under my charge, located in Stockton Street. They were all in the advanced stage, and nearly all died within forty-eight hours. They were placed in a room apart from the other patients, of whom the number was about 150, but no other protective means were used. The disease confined itself entirely to the cases brought from the ship, not an individual among nurses, attendants, or other inmates of the hospital contracting it.

All experience goes to demonstrate that both Yellow Fever and Epidemic Cholera are intimately associated with local impurities and filthy modes of living, and may be warded off to a great extent by sanitary measures rigidly enforced. The danger from these fatal scourges lies at home rather than abroad.

3. *Small-pox*—In nearly all the large cities of the world cases of Small-pox occur from time to time. The disease is a constant presence in most of the principal cities of Europe; but only when an epidemic influence favors its extension is it liable to assume formidable proportions. From commercial centers and large sea-port towns it is impossible to exclude it. Individuals exposed to its infection, immediately before departing from the East for California, would arrive here apparently in perfect health, but in a few days might develop the disease. Its periods of epidemic outbreak are not definite, though they usually recur at least once in seven years. In the interim, when the public mind is free from fear, people neglect the only means of protection, and the materials accumulate to feed the next epidemic. So it will be until vaccination shall become universal. Compulsory vaccination is the only remedy. In European countries it has been adopted with eminent success. It is founded on the duty of self-protection. Every unvaccinated individual endangers the health and lives of others during the prevalence of Small-pox, or when it threatens an invasion. This principle is recognized by our State legislation in regard to children attending the public schools. The history of Small-pox proves that we have the means of protection from it at home, and that it is idle to attempt to secure immunity from it by guarding against its importation in ships from Asia or elsewhere, or its introduction by railroads or other inland channels.

4. *Leprosy*—In regard to Leprosy little need be said. There is not, nor has there ever been, the least reason to fear its diffusion among our people. Unwisely, if not dishonestly, efforts have been made from time to time to alarm the public mind with the idea that we are in danger of an invasion of the disease through the Chinese

immigration. The President of the State Board of Health has received, from intelligent persons in the Atlantic States, earnest inquiries whether our nation is likely to be inundated with the plague of Leprosy, as might be inferred from certain statements published in California. Whatever may have been the loathsome and dangerous character of the disease in ages long gone by, it has lost its terrors in modern times. The best authorities all over the world agree that it is not contagious or communicable under any ordinary circumstances, and that it is propagated only by inheritance. In fact, it appears to have been dying out during the last centuries, and is now scarcely known except sporadically in a few countries, and as an endemic in some isolated localities. From the settlement of California thirty years ago, and the immigration of the Chinese at the same period, individual cases have been observed among the latter. But no disposition of the disease to extend itself has been manifested, and it is a question whether a single case of genuine Leprosy has been known in a Caucasian subject during that time. Certainly there is no proof that any white person has contracted the disease from a Chinese leper.

In conclusion, the following propositions are offered as strong probabilities approaching to demonstrated truths:

Proposition One—Yellow Fever will not invade California from the ocean. It will not spread by the introduction of individual cases overland. It will not become epidemic without an approach, more or less gradual but distinctly marked, in an epidemic form, in the towns and cities lying between the Valley of the Mississippi and the Pacific Coast. As it is not only arrested by frost, but driven back, as it were, to its winter quarters on the Gulf of Mexico, whence it must start afresh on its march the next year, the epidemic wave will never have time to make the transit of the continent so as to reach California before its arrest by cold.

Proposition Two—Epidemic Cholera may be brought into the State both by land and water. It will not spread without the presence of the epidemic influence. The approach of that influence will be noticeable in the breaking out of the disease to the eastward. As long as there is no Cholera in the Mississippi Valley and in Mexico we need not apprehend it here. In any case, it will never prevail severely in our ocean climate.

Proposition Three—Small-pox may be introduced at any time, both by sea and by land, in spite of all precautions. Judging from the past, we may expect it to become epidemic within two or three years. When it begins to spread, nothing short of universal vaccination will arrest it.

Proposition Four—As far as regards the Caucasian population, Leprosy is a mere phantom.

Proposition Five—Quarantine, however needful, is an uncertain protection. As far as it diverts attention from causes of disease at home, it inspires a false security, and does harm. The true defense from pestilence in every form lies in the care of our own dwellings and their surroundings. The people must be educated in the laws of health; and those laws must be enforced by official authority, if necessary.

Proposition Six—Boards of Health, local, State, and National, when properly organized and sustained, are an invaluable protection to health and life, and every citizen should feel that they are as necessary to the public welfare as a guard of police or of soldiery.

DRAINAGE AND SEWERAGE.

BY F. WALTON TODD, M. D., MEMBER OF THE STATE BOARD OF HEALTH.

In the larger towns of California much enterprise and large sums of money have been expended in providing necessary public buildings and charitable institutions; an adequate and cheap supply of water; protection against fire, that scourge of all our towns; the grading and paving of streets, and police requirements. These wants are of such prime necessity that under our expensive system of local government they are not only apt to but positively have prevented that consideration which is due to the sanitary condition of all places where even a few thousand people are collected in a limited area. Health being the rule, and disease the exception, in our favored climate, has withdrawn public attention from the possibility of our towns, or cities as they prefer to be called, ever suffering from those fearful visitations which afflict older communities, who have, like ourselves, been regardless of the means necessary to preserve health until the warning voice of the sanitarian has come to be regarded as an appeal of some impecunious doctor without a *clientele*, wanting a situation that pays, or science-struck abstractionist, who with his microscope and means of chemical analysis sees forms that to him are magnified into "gorgons, hydras, and chimeras dire" in all the simple elements that furnish food or drink to man; and yet the practitioner of medicine almost daily hears, "Doctor, I would rather give you fifty dollars to insure me from being sick, than five to make me well," from people who not alone contribute nothing towards keeping themselves and their neighbors well, but will absolutely expend an astonishing amount of time and trouble to "get even," as they call it, on the member of the local Board of Health, who, serving gratuitously on the Committee on Nuisances, asks him, in tones that imply a favor sought, to clean some disgusting vault, or remove a nasty pig-sty, that his own sense of decency should have prompted him to abate unasked.

Then, communities engaged altogether in the pursuit of money cannot well understand how any class of men should unselfishly give their time and take trouble without compensation, especially when the thing to be done operates against their own interests. The efforts of the sanitarian are consequently regarded with distrust or indifference where they are not thwarted, his advice in matters which he has carefully studied is disregarded for that of some ignorant but officious politician, who has an interest to subserve, until misdirected efforts result in harm, where good results might have followed intelligent action. This is apt to be the case in new towns. A drain is made from somebody's hotel, and another from a livery stable is allowed to connect with it, and so on until an interest is established that has weight in a Common Council, and thus, from step to step, a system grows up altogether vicious, which sooner or later, and always after large sums of money have been spent, has to give way to

another, the work of a competent engineer, but not until some serious damage has been inflicted, which the engineer, Board of Health, and Common Council combined cannot repair—as in permitting the entire garbage of the most populous part of Stockton to be emptied into Stockton Channel, an estuary without a current, little affected by tides, and incapable of being cleansed when it shall have reached a point of super-saturation and become a pool of festering filth, around which the city is built, and over which the daily and nightly trade winds of summer unceasingly blow, to carry the fetid exhalations into the houses, breeding zymotic diseases, or form a nidus for some imported pestilence, like cholera, which is now said to be prevalent in Japan, and might so easily be brought in some of the crowded cargoes of Chinese monthly arriving at our ports.

The writer has made ineffectual efforts, in the town above named, to have a small tax levied specially for drainage and sewerage, and he thinks it the part of wisdom for the Common Council in all our towns to set apart a fund for this purpose, which should be used first to secure a plan, drawn by the most competent person, and afterwards from time to time, as the fund will admit, to carry out that plan. A little work done each year upon it would soon present a system that the community would take an interest in extending, which no new community would feel able or willing to execute at one time, and it should be carried out under the direction of the Board of Health.

It is not an easy matter to get systematic work, for some remote good, done by communities who think of science as Dogberry did of reading and writing, that "it comes by nature;" and it becomes discouraging when the authorities stultify themselves by placing on Boards of Health men who take no interest in sanitary matters, who have not the necessary training or education, whose whole time is occupied in an endeavor to trick the community into the belief that *they* have been vouchsafed some occult knowledge not revealed to common mortals, and whose combined fraternity never made a discovery or established a fact of value in the cure or prevention of diseases.

There are some general laws of universal application in the sewerage of towns, as well as in their drainage, such as the separation of surface water from the sewage; the relative caliber of sewers to their contained matters, present and prospective; and the form best adapted to the grade; their ventilation; the obtuseness of all angles; and facility for passing unobstructed their contents. And there are specific requirements depending on the topography of towns, the conveniences for flushing, and the disposition of the sewage, for all plans are fatally defective which do not make ample provision for the latter. In some cases the main stem may find an outlet where it would be unobjectionable in others; in others, it would be necessary to convey it into reservoirs, from which it could be pumped into pipes and carried to where it would be useful for fertilizing soils, or dropped into running streams, whose waters are not and will not be used for domestic purposes, as at Stockton, at San José, and at Petaluma, at Antioch, Benicia, and at Vallejo.

Towns cannot begin too soon to establish their systems of sewerage. It is the worst policy to wait until the soil becomes saturated with excrementitious matters, for there is no process by which it can be depurated. It is equally bad to wait for individual interests adverse to a plan of general utility to spring up, for these must be combated,

sometimes at great expense, or engrafted upon the plan permanently adopted, often to its prejudice, if the latter is done; besides, it would be much less expensive to construct sewers through a virgin soil than to have to excavate under or through the brick foundations of buildings laid in cement. Every consideration, in fact, points to the great advantage of adopting early a plan and systematically working to its fulfillment; and no plan should be accepted until it has, at least, been supervised by a competent civil engineer, who has surveyed the ground, accurately determined the grades, and furnished estimates of its cost.

REPORT ON ABATTOIRS AND PUBLIC BATHS.

 BY A. B. STOUT, M. D., MEMBER OF THE STATE BOARD OF HEALTH.

REFORM OF SLAUGHTER-HOUSES.

San Francisco, June 21st, 1879.—At 7:30 A. M. I started to visit the butchery establishment on San Francisco Bay, near West Berkeley, and the bathing establishments of Alameda. The morning was rather foggy; a brisk west breeze blew in through the Golden Gate. We arrived at 10:15 at the abattoirs by the railroad which passes on the east border (lee side) of the extensive slaughtering works which here skirt the margin of the bay. The abattoirs are built on a bluff, about fifteen feet above the sand beach. It was nearly dead low tide, the beach underneath the slaughter-houses being left perfectly bare. The beach under the works, from which the water had receded, was as perfectly clean and clear from offal as though immediately over it were no extensive swine pens nor active abattoirs. The swine are kept there on a platform, slightly dipping seaward, with troughs to receive the blood and water which flows from the felling platform eastward and on a higher level.

This shows that no more favorable conditions for an inoffensive abattoir could be demanded. But forthwith the parasite appears, the persistent fat-tryer sets up his greasy boiler.

From the moment the railroad bridge, near the works, is passed, the atmosphere, which travelers on the road must breathe, is saturated with the odors which try men's stomachs. Marshall's respirator, unbecoming indeed to ladies' faces, becomes an indispensable luxury. The adjacent land is now unoccupied, and will remain so if this objection continue. It is a killing cloud on title. The railroad brings all the cattle to the fine inclosures for their reception and their rest from fatigue, with best of fodder and water for their relief, and cannot be dispensed with, the public comfort and health to the contrary notwithstanding; but the "trying" nuisance may be abated. It is no use to say to struggling industry, "try on, try ever;" in this case we must exclaim, let us stop trying.

July 11th—Visited the beef and sheep abattoirs of Butchertown, and met ex-Supervisor Shrader, who with utmost courtesy showed up everything—also the abattoirs of Lux & Miller. Unless we except the great "Mardi Gras" of the French, when the great competitive match to produce the fattest meats is entered into, it would be difficult to find, in any country, a finer exhibition of products on an average day for the diurnal supply of a city. The rapidity of execution, and the perfectly practical and cleanly performance of all the work, could not, we believe, be excelled. Unfortunately for our disposition and duty to find fault freely, but fairly, the tide was high and the wind blew a moderate gale; yet from the moment we passed Gray's Station, on the Long Bridge, the air was redolent of coming scenes and perfumes. We might have exclaimed—a respirator, a

respirator, our kingdom for a respirator! But this was high tide with a strong sea breeze blowing; but we were informed that there was a tide in the affairs of men, which, if taken at low ebb and nor'-western gale of Araby blowing, that the atmospheric pressure on the olfactory nerves would lift off the hat from our head.

Several years ago, when a sharp and protracted contest was going on between the people and the butcheries at Mission Creek, to effect the removal of the latter, we set forth a systematic method by which to sanify butcheries wherever located. The views then expressed still merit republication and adoption. The abattoirs were removed to their present location. Large tracts of land in the center of the city have been restored to habitation and increased taxable land. But, although a great amelioration was obtained, the butcheries have only been partially improved for want of a general jurisdiction and uniform system of conducting the business. The nuisances have not been suppressed, but transferred to another locality. Gardenville, in a word, all South San Francisco, is becoming unhealthy and uninhabitable. In certain conditions of the atmosphere, the Roman Catholic Orphan Asylum is inundated with the pestilential odors, and either the butcheries and their attendant still greater nuisances must be invited "to go" again, or be induced to adopt, or forced to inaugurate, a new system. If they will reform, they do not need to go. The beef and sheep butcheries are the least offensive—the swineries are much more intolerable—but worst of all are their parasitical attendants, the tallow and lard tryers, the glue and soap makers, and all the variety of makers that live on the "material" they obtain from the abattoirs. At present each throws the blame on the other. The suffering community is rather disposed to exonerate the butchers. But together they care but little for the suffering community, and should together be held responsible. While the butchers remain the others will stay. If they go, the others will move off with them. If all the tryers of fats, etc., etc., were compelled to do their boiling under domes fitting closely to their boilers, and the vapors were carried through iron cylinders heated to redness, involving but little expense, their stinking, death-dealing effluvia would be destroyed. As it is, it is worse to go through their midst than for land folk to go to sea.

THE LOCATION AND CONSTRUCTION OF ABATTOIRS.

EDS. TIMES: I observe among those who protest against the location of the abattoir at the foot of Webster Street, the names of gentlemen who reside so far from the scene of operations that their fear of pestilential odors must be the only ground of their remonstrance. But those gentlemen and all the public may be assured that as far as noxious emanations from the abattoir are involved, they may remain unconscious of its presence, nor will their lands depreciate in value. If they wish to know of the abattoir they must search for it. If I believed their homes or their lands would be thus rendered disgusting or unsaleable, I certainly could not so far forget the proprieties of life as to advocate the location. There is no idea of partiality in the proposition, for the time will come when, like Paris, San Francisco will furnish its inhabitants from abattoirs in the southern and western parts of the city, as well as from its northern extremity. But these will be inodorous, and harmless as any other vast operation which supplies on a large scale the unavoidable necessities of the people. The signatures of those who favor the northern location are more numerous than of those who protest, and their united interest is very great.

Where populations are great and dense, they must live by systems. Combined and often complicated methods will overtop individual efforts. Companies with costly apparatus will overwhelm private enterprises. If in union there is power, the truth of the maxim will be realized in these great works of humanity. The machine bread-maker will feed the people cheaper than the private baker. Steam laundries will break the manufacturer of wash-boards; and the abattoir, with its instantaneous manipulation by scientific and economic processes of all its material from hoof to horn, will anticipate decomposition and provide a healthier, cheaper, fatter meat to the people.

The consolidated slaughter-house system recommends itself to public adoption by the fact that the large capital required for its construction insures for it a directorship of competent trustees to enforce the strictest order and cleanliness. The false economy, the selfishness, the ignorance of one set of individuals cannot throw odium on the honest dealing and liberality of another. As a system, all its parts must operate continuously and in harmony, because the profits of all its parts are derived consecutively one from the other. As regards the dreaded effluvia, which are the gaseous products of decomposing organic matter, they cannot occur, for those substances are utilized before decomposition commences. In fact, these gases are too valuable to be lost: they are employed in the combinations of useful products, by anticipating their evolution in the form of noxious gases. Twelve hours suffice to convert the living animal into a variety of conditions preparatory to their final appearance in the form of chemical products and animal material for fertilizing the soil. Neither the atmosphere which fills the city nor the waters of the bay can be polluted by impurities, for every part and portion of the animal, from the hair to the bone, are converted into saleable and valuable products. It may even be asked if the refuse of an animal, when properly economized, will not produce more than his meat, which is sold by the pound for food. The difficulty in the calculation is that in selling by the pound bone and other parts are included, which are lost to the consumer, although paid for at the price of the dearest meat.

A general idea of the working of an abattoir may be formed from the following description: The first necessity is an abundant supply of fresh water. Many of its uses, however, may be supplied by clear salt-water: and as fresh water is scarce and expensive, the salt-water, as it arrives from the ocean through the Golden Gate, may be largely employed. Salt-water soiled with mud and the filth of the docks would not be desirable. Fresh water may be obtained from wells or from the water companies; in either case reservoirs and steam-engines are called for in distributing it where required. The land selected should be chosen, as far as possible, to obtain easy drainage, or should be graded to an inclined plane. Hence, with a copious water supply from the upper side, and sewers through the premises leading into an ample main sewer emptying into the bay below the water-level of low tide, it is easy to see that the first requirements of cleanliness are obtained. A piece of land thus selected may be entirely surrounded with a lumber or stone inclosure: or should this course be in the outset too costly, smaller spaces may be strongly fenced in. Of these the first would be for the reception of cattle on its first arrival from the country. It would be graded, or better, planked, with aqueducts leading into sewers for cleanliness: with proper water basins for the animals to drink, with sheds for their rest and protection from the sun or from the storm. Over such sheds would be receptacles for grain and fodder. There would be inclosures for different kinds of cattle, and subdivisions for the property of different butchers. The general size of such inclosures must be calculated by the monthly consumption of cattle. Through this area cars on a railroad track may pass to receive the sweepings of this court, and convey them to vats hereafter to be described. These processes are done at stated hours, and the inclosure irrigated and occasionally lined, to prevent the generation of vermin. In this manner the cattle are retained for a sufficient number of days, are well fed, and are refreshed from the heat and fatigue of their land journey, or their confinement on steamboats.

Second—The butcher now selects the animals he wishes to prepare for market. These are passed into another inclosure. Here the same general arrangements prevail—water sewerage, cars, granaries, but instead of sheds, stalls are built, in which to feed up and fatten the animals to the desired degree. Each stall has its supply of water, is inclined towards gutters for cleanliness, and is kept well limed and ventilated.

Third—Animals thus rested and retaken to repair the losses by fatigue, exposure, and privation on their journey to market, are in condition to enter the third department of the abattoir, and, commanding a higher price in consequence of their superior excellence, easily repay the apparent extra expenses of their careful keeping. In an economical and hygienic view, what incalculable extra expenses in the cost of living are spared the public by the provision of such meat. Herein, deceptions are excluded. The people know their food has undergone a systematic and legalized inspection. Neither pork, *à la triehina*, nor black meat, nor flabby, watery meat, nor veal whose mortuary report is unknown, can be distributed wholesale or by contract to inexperienced or unscrupulous caterers.

As a step of political economy, by the improved alimentation are obtained stronger men, healthier women, and more robust offspring. The third department comprises the slaughter houses. In this inclosure a series of buildings is constructed, in number according to the demand, supplied with all the appliances for cleanly and rapid butchering. Every butcher has and controls his own building, and pays rent therefor. This arrangement supposes that an association of shareholders, not butchers, holds the enterprise. If an association of butchers enter into the system, fewer buildings would be necessary. In the latter case shambles would only be needed for extra butchers, to whom the association might wish to let or lease them. Every building stands alone, with ample space on every side for light and ventilation; is supplied with fresh and salt-water—also with hot water if desired; has pipes with the necessary traps for the escape of waste water, and is provided with all appliances the business requires.

In these shambles the animals are felled. The first product, the blood, is received in proper basins, and sold to manufacturers of preserved meats. It is also useful in the arts. The animals are then suspended, decapitated, flayed, and striped. The marketable portions having been selected, all the remainder, instead of being cast into the bay or fed to swine, is immediately collected into cars running on a railroad track and sent to the depot, where it is cast into

vats. The heads pass to a depository, to be there divided up according to the various uses of their different parts. The skins are forthwith washed with preservative fluids, to render them inodorous, are folded, bound up, and sent to tanneries in the country. Bones are sent to special places, according to the materials to be manufactured from them. For all these manipulations a few hours suffice.

Fourth Department—Now, Mr. Editor, please to walk with me through this grand laboratory. Firstly, you see it supplied with “all the modern improvements” to convey water, with drainage for the immediate escape of washings, and with a steam-engine to move the different mechanisms employed, and send steam and hot water wherever wanted. Here you find rooms to melt down tallow and lard, with hydraulic press to obtain lard oil. An apparatus is here to get the purified lard into tins, or to prepare the tallow for the candle-maker. In another hall you see the hides disposed of. In this building tongues are salted and hams prepared for the smoke-house near by.

Over here are steam crushers to break up bone, steam it, and prepare it for its conversion into gelatine, animal charcoal, or phosphorus. In this place hoofs, horns, cartilages, etc., are packed for exportation, or reduced to the shape most convenient for manufacture. From some of the materials ammonia, or salts of ammonia, are obtained, and here you perceive are the requisites for the purpose.

Next pass with me to this section of the inclosure. All these vats are supplied with cullers, mixers, or mangles, to reduce to one uniform mass or pulp all the offal cast in them from the afore-said cars. The requisite disinfectants, quick lime, carbolic acid, salts of iron, etc., are added, aluminous earth enough or sand to obtain the required consistency and dryness are mixed in, and thus, with other necessary manipulations, that rich inodorous fertilizer of the soil, called animal manure, is produced. It acts more favorably upon exhausted land than guano, and probably may be sold at a cheaper rate.

A collateral advantage to be derived from this system is that to such a depot may be sent the garbage carts of the city, as well as the refuse and sweepings of the markets. These, instead of being thrown into the bay, or upon open lots, or concealed in cellars—whence putrid emanations, destructive to health, proceed—may be converted into inodorous, useful products, to fertilize the soil. A stringent sanitary law, compelling compliance, would thus readily divert thousands of tons of offal from the public sewers into more useful channels. You may cease to talk of the effluvia of an abattoir if you will, but think a moment of the villainous odors from decaying vegetable refuse which load the atmosphere of the city. An idea prevails that the effluvia from butcheries is not unhealthy nor malarious. The fine robust health of butchers is offered in evidence as proof of the fact. It must be remembered that the emanations to which butchers are exposed, and the atmosphere in which they are enveloped, are not filled with the gases of putrefaction. The air they breathe is impregnated with the vapors of fresh blood, and the aroma which accompanies the departing heat of newly felled animals. These odors are disagreeable to most people—butchers, by habit, become insensible to them—but they are not necessarily poisonous to health; yet it is not to them that butchers have to be thankful for their fatness, strength, and robust health. It is only such young men who can enter on the business. Their hours of labor compel temperance, and they live without stint on the most nutritious food. Enviroined with such an atmosphere they are, perhaps, shielded from a worse one. When, however, the garbage of the abattoir is allowed to putrefy, to decompose, to macerate in water, then its effluvia become as detrimental to health as any vegetable malaria producing decomposition. Water containing animal matter in a state of active putrefaction is deadly poisonous, and the air malarious which surrounds such depots.

To conclude, then, this rapid survey of the consolidated abattoir system, I have only to add in its favor, that under good legislation it may become a useful link in the chain of systematized operations for the sanification of the city. For this great object a combination system must be inaugurated. In vain may the faithful Health Officer “follow the scent.” He can accomplish, good hunter as he may be, but little. The game must be bagged by a comprehensive system.

The four departments into which I have divided my description may be so far divided as to be independent, but it is only to be remembered that offensive effluvia are evolved from the decomposition and putrefaction of organic matters, and that it is only necessary to intercept this process to anticipate it by the application of other chemical processes, and you may establish an abattoir in any convenient situation.

ARTHUR B. STOUT, M. D.

PARIS SLAUGHTER HOUSES.

They are located in La Villette, one of the outer wards of the city, just at the edge of the fortifications, where their odor cannot be offensive to the inhabitants of the city proper. They cover an immense space, larger than any thirty blocks in St. Louis, and were constructed under government authority, at the city's expense, and are constantly under the supervision of a branch of the municipal government. There is a police station, telegraph office, barracks for the troops, and a small force of soldiers always on duty within the grounds, which are surrounded by a high stone wall, and divided into regular rectangles by four avenues intersected by eight rues. The buildings are all of heavy stone, fireproof, and very well built. The Jews have a separate building where they do their slaughtering, according to their peculiar religious mode, by cutting the head of the animal entirely off with a single stroke of the knife, and not

by a stroke on the head with a mallet, as the other slaughterers here do. There are a series of cours running through each building, covered with a glass ceiling, and in these cours the slaughtering is done, and the animals are dressed on wooden frames placed at regular intervals on each side of the cour. A peculiar feature of the operation, which I have not noticed elsewhere, is that of blowing up the carcass as soon as the head and legs are cut off. The body being placed on the dressing-frame, an incision is made in the breast near the neck and the nozzle of a bellows inserted. A man then works the bellows for about fifteen minutes, until the whole carcass is swollen out like a small balloon. The reasons given for this are that it makes the meat look better, more plump, than it otherwise would, and that it enables the one who skins the carcass to get the hide off quicker and easier, without injuring it. All animals, bullocks, calves, sheep, etc., slaughtered here, are blown up in this manner. The greatest cleanliness possible in such a business is observed, and the disagreeable scents are reduced to the minimum.

A novelty in pig-butchery is to be seen here on the avenue of the pig-stys, in the houses where they slaughter the grunTERS. The pigs are taken into a large round-house, something like a locomotive round-house in America, having a cupola in the roof to let off the smoke, the floor being divided into triangular dens. A dozen or so of pigs are driven into each den at a time. A man strikes each one in the head with a mallet. They fall down quietly and are laid in a row. Then the butcher comes along and cuts each one's throat, and a girl holds a basin under the pig's throat to catch the blood, which is all carefully poured into a large can and stirred by the girl to keep it from curdling. This blood is used in making the large, black sausages, so much sold in Paris. Another girl goes along the row and works the pig's front legs to keep the blood flowing, and twists the hind legs to disjoint them. A man then carries each porker to the side of the room and arranges them in a methodical row, heads all in line, and covers them with straw, which is set on fire, and burns off all the bristles rather more quickly, but in the same way as cooks scorch the pin-feathers off a fowl in America. The longest bristles have been previously pulled out by hand by one of the butchers and preserved for brush-making. After a good scorching the pigs are carried into the dressing-room, hung up on hooks and scraped all over by means of a sort of drawing-knife, handled by a skillful operator, who scrapes a pig in about one minute. Then the bodies are washed and the entrails taken out and cleaned. They utilize every part, even some of those which Americans customarily throw away. A ludicrous sight, as you walk down the avenues, are the long rows of bullocks' legs with the hoofs still on them, standing up against the walls of the slaughter-houses, toes out, awaiting purchasers.—*Correspondent St. Louis Globe-Democrat, July 10th, 1879.*

This statement is valuable to corroborate the above remarks. It is evident the government exercises a direct controlling power. The present confused state of imperial and republican legislation in France enables the municipality to enforce the regulations of hygiene. We do not of course here propose the impracticable, but Police Inspectors could efficiently replace the military authority. The benefit of their presence would amply compensate their cost by the improved health of the vicinity and increase of land values. Neither do we advocate the plan of exposing young girls to any such loathsome employment.

Mr. Codman, in his discussion, addressed to Congress on "Free Ships," we might say Codman vs. Lynch, remarks:

"One argument in opposition to free ships is founded upon the injustice that would be done to our own ship-builders. Were this true, it might be said that ship owners and the general public have some rights that ship-builders are bound to respect. The interests of our whole people are paramount to theirs." (See Economic Monographs, No. VI, page 19.)

This idea is perfectly applicable to our butchers and their dependent families, the fat makers, etc. They demand protection, because the community depends upon them for beefsteaks and chops. But if they disregard all the interests of the same community upon which they in turn depend to buy their chops, then they forget, in truth, their own interest, and become reckless of every interest except their own personal profit.

BATHS AND BATHING.

This subject asks for brief mention. Aware that it does not come within the limits of legislative action, except indirectly, we may,

notwithstanding, reach the public mind through the appeal to the State Executive on important matters of general hygiene.

The Bay of San Francisco as a salt-water bathing resort is steadily increasing in importance. On the north shore of the peninsula are four large and well equipped bathing establishments. At Alameda are five private bathing institutions, most admirably supplied with all the essential requisites, and easily accessible from the city by ferries. For safety to the bathers of all ages and both sexes, for comfort and luxury, and, with teachers to regulate and aid in aquatic exercises, as hygienic gymnasia they are worthy of a much more extended reputation than they already possess.

To more adventurous bathers the shore of the Pacific Ocean, near the Cliff House, offers the same facilities as Rockaway or Long Branch on the Atlantic coast.

Surely did Mr. James Lick, the humanitarian, understand the principles of political and hygienic economy when he donated his bequest to public baths. All enterprises of the kind to-day are private. It is time the public, with its public resources, should, as with public schools, invest its influence and express its appreciation. To prepare the way for the reception of Mr. Lick's munificent bequest, some public action might be taken, which would associate to itself the gift of Mr. Lick, equal to \$150,000.

1. To buy the site for an elevated reservoir, with pumping-works to supply salt-water and furnish the bath-house adequate and conformable to the dignity of such a bequest, together with means to pay its current expenses, could never be done on \$150,000.

2. To build a bath-house, and pay the Spring Valley Water Company for fresh water to supply heating apparatus, and running expenses, could not be accomplished with \$150,000.

3. To use salt-water near or at the beach, without elevated tank and costly pumping-works, would inflict a heavy cost in car tickets to transport the bathers to the bath, and hence they would not be free baths.

For none of these plans would \$150,000 suffice.

Let us now inquire what might be attained by a general system inaugurated and executed by competent engineers.

A foreknowledge of the point of introduction of the Lake Tahoe water, should the Tahoe project be adopted, would greatly facilitate the site and manner of works and kind of water to be selected for the Lick Public Baths, and thereby greatly economise that fund.

The great hygienic question of the day is, undoubtedly, the water supply of the State—firstly, for the large cities; secondly, for irrigation of lands; thirdly, for mining purposes. Of the cities, San Francisco is in the most urgent necessity. The route from Lake Tahoe to San Francisco is the most central, touches the most cities and towns. The water of the lake is unsurpassed for excellence, and certainty of never-failing supply. Had the work been commenced when first projected it would now be completed. But too many projects were in the field, and speculation so rife that it defeated itself. With an abundance of pure water come cleanliness, health, long life, and happiness. One would think that water like air should be free to man. Let the people at least have it without stint, and at almost free rates. (See report of A. W. Von Schmidt, 1871.)

A glance at the natural water supply of the State, as well shown on the accompanying map (see report on the Water Supply of San Francisco to the Water Commissioners, by Colonel Mendell, 1877), will convey the idea of a most perfect system. No State in the world can present such a view. On the eastern boundary the Sierra Nevada appears as a vast water-shed, with an elevation which overlooks the entire domain. A vast embranchment of rivers, with their innumerable forks, pour the mountain waters into two great confluent streams—the Sacramento from the north, the San Joaquin from the south. At their junction in the interior of the country commences the magnificent main trunk, which, flowing westward through the middle of the State, sweeps majestically through the Golden Gate into the Pacific Ocean.

Again, high in the Sierras on the eastern limit of the State is that master-work of nature's grandeur, Lake Tahoe, the consummation, par excellence, of an Almighty project to fulfill the destiny of a favored people; a reservoir not made with hands, whose masonry is imperishable; whose crystal waters, fresh distilled from heaven, need no meter to measure its economy, but lives there, its fertilizing dews giving birth to luxuriant forests, and in the silent but persistent eloquence of nature's voice inviting every man and every acre in the State to draw upon it and quench their thirst. It seems as though the Almighty Engineer, foreseeing the coming events, had taught the plan and, forsooth, almost executed it. Certainly has He executed and bequeathed the most costly sections of His vast intention. Nor is interest charged withal upon any bonds. But yet we linger and gaze and thirst, but accept not the proffered boon. Shall we wait upon the shore until the whole stream has passed by?

Let us suppose that under a dire necessity we were compelled to build a reservoir like the Lake Tahoe, no petty soluble, leaking, cracking, water-tank is it. What might be the cost of the work and the time to construct, the bonds and the interest? Yet we have it for the taking at only the cost of tapping; we dally with time and take it not. Before such advantages to the State, two-thirds of the cost already paid in as nature's free bequest, in our view, these natural resources should at once be applied regardless of the millions to be expended; while on the other hand, if we compute the actual revenues in coin, the saving of life in hygienic ameliorations, the preservation of property from conflagrations, the increase of the production of cereals, the greater certainty of crops, the greater products from hydraulic mining, and finally, the sanification of cities and towns would compensate most amply any investments.

In conjunction with such a work, we would most respectfully suggest another reform. At present there is much discontent in regard to the employment of prison labor. While manufacturers complain, it is evident that fifty cents per day for prisoners' work is underrated. This labor, if expended on such a public work, would become worth more than double to the State and the political objections be removed. This subject, however, not being strictly of hygiene, we do not seek to pursue it.

PUBLIC GYMNASIA FOR THE IMPROVEMENT OF YOUTH.

Gymnasia for the maintenance of health and inculcation of good manners and morals are the equivalents of prophylactics in medicine,

to protect the physical system from the invasions of disease. Hence, the cultivation of health and physical vigor, by the use of gymnasia, is as legitimate a subject to be entertained by the State Board of Health as is the introduction of ozone as a protection against malaria, or the construction of sewers to disinfect a city.

Mens sana in corpore sano is an old definition of perfect health, but the essential element of this state of beatitude is the *corpus sanum*, a sound body. Without healthy physical tissue, blood, brain, bone, muscle, there can be no truly sound intellect. The development of mind is consecutive to the evolution of body. As the body is built on the true principles of physical architecture, under the control of accomplished architects in nature's laboratory of man, so in its turn will evolve the educated mind to adorn the temple.

The statue of clay was first molded, and the vital spark of life was then breathed into its nostrils. To procure, then, exalted intellect and pure morals, first construct your statue right. The ancient Greeks well understood these principles of physiology and the dependence thereon of psychological evolution. To their practical application the Spartans owed their deliverance from the Persian army. The gymnasia of Greece were the pride of their educational system. Even the women were required to obtain proficiency in calisthenics, for it was a law that no young woman could marry until she had given some public proof of her physical perfection. Under such an educational regime we hear of the Spartan mother saying to her son on his going forth to battle, "rather be brought back to me on your shield than return unworthy of your country."

Xerxes' army was vanquished, and Greece was rescued.

The establishment of gymnasia in Germany is of an ancient date, and they have now become, after many vicissitudes, like a north star in her intellectual firmament. They were constituted as second class schools, between the primaries and the universities—an intermediary rung in the scholastic ladder. Originally they were instituted by the clergy as "cloister schools," but subsequently, after the Reformation, they were secularized, and now exist under the Empire as independent teachers of secular education. And they now preside in Germany as the arbiters between the liberty of free thought and the education of theocracy.

Now, we are one of the many who believe that the women of America are as noble and courageous matrons as the best and purest of Hellenic production. We feel assured that the incorporation of gymnasia in our public school system would meet with their entire approbation, and prove an invaluable relief and aid to them in rearing their offspring.

In the report of the State Board of Health to his Excellency, Governor Irwin, in 1878, page 11—Report on Prison Discipline—recommending the introduction of an educational police to oversee the discipline of the public schools, as regards the good behavior of the pupils out of school and on the streets, the following extract is presented:

Secondly—An extension of the power and authority of Boards of Education, and the creation of a reformatory educational police for minors or juveniles. Such supervising agents should be entirely distinct from the municipal police, under the direction of a tribunal of the Board of Education, and with power to make arrests—such arrests to be considered as only corrective, and divested of the intention of criminal prosecution. Such a tribunal, therefore, would be the first corrective step to warn the unruly and the unwary of their danger—in a word, the primary correction of "hoodlumism." The officers of this force should wear a distinctive uniform,

but different from that of the municipal police. Boards of Education would thus hold a corrective court, before which juvenile delinquents would be arraigned; *their parents cited*, their home discipline and education looked into, the facts recorded for future reference, and such reformatory counsel given to both delinquents and parents or guardians as would tend to prevent a recurrence of arrest or complaint. Here, then, would be a tribunal to which parents, whose children, from bad outside influences have become unmanageable, would have recourse for aid to assist their discipline.

We would not inveigh against San Francisco, in its general average of good versus evil, as compared with other great and overcrowded cities, but experience teaches that the profanity and indecent language of the street boys of San Francisco is monstrous and disgusting. It is fast surpassing the power of individuals to control. It penetrates the interior of the best families, and frustrates the best directed efforts of intelligent homes to maintain parental discipline and home education. The beautiful lessons of home are annihilated by the damning influences of the street. However we may seek to apologize for ignorance, and exonerate recklessness from blame, it is the howlings of the street who corrupt the purity of our race and thwart education of its harvest with a withering blight. Hence a popular, universal, and legislative intervention is demanded. The shield of universal education, guarded by universal love and beneficence, can cover and protect this emergency. The enlightened people of our State will appreciate its merit, will recognize its utility, will see economy in its enactment, and public opinion will defend it.

The plan above proposed will place the whole matter under a legislative jurisdiction.

We hope not to appear importunate if we still continue to urge this suggestion.

Here appended is a description of the new gymnasium just opened by the Olympic Club, to show the perfection which the gymnastic arts have attained in San Francisco, taken from the *Alta California*, January —, 1879:

THE OLYMPIC CLUB—OPENING OF THE MAGNIFICENT NEW CLUB-ROOMS AND GYMNASIUM.

The new rooms of the Olympic Club were thrown open to the members yesterday, and were visited by large numbers of ladies and gentlemen, who had the pleasure of seeing what is claimed to be the finest gymnasium, not only in this country, but in the world. The members of the club, for some years, were dissatisfied with the location of their rooms, which were on Howard Street, at the corner of New Montgomery. In June last they made an arrangement with Mr. Barron, the owner of the property known as the Morton House, which had been vacated, and leased it for ten years. It is central in its location, and has a frontage on two streets, Post and Morton. The size of the lot is 100 feet on Post by 127½ feet deep. The original building was three stories, and was cut into small rooms and hallways. As soon as the property was secured Mr. Barron raised the building some nine feet, to make the stores on the ground floor higher. The Club have the rest of the house, and, under the direction of Mr. W. S. Lawton, the whole of it was torn down, leaving only the bare walls. A large number of workmen were employed, and everything rebuilt of the best material, with the sole idea of making the gymnasium as near perfect as possible.

The entrance to the rooms is on Post Street, and the main hall takes up the whole of the front on that street. This is a large, light, and airy room, 57.6 feet wide by 97.6 feet long, and 35 feet high. The roof has a large skylight, with ventilators, and is hung from the walls by heavy truss girders. The floor is laid of the finest timber, and is filled in below with cement to stiffen it and to deaden the sound. Around this room, about half-way up, runs a gallery six feet wide, built especially for running or walking, and it is covered with finely corrugated rubber, making a good resemblance to a turf track. The ends are raised on the outside, so that in turning the sharp curves the runner will be kept from being thrown off his balance. This can also be used as a balcony, and seats can be put there without trouble. It is reached either from the main floor, by two spiral stairs, or from the floor above. A row of benches on the main floor separates the gymnasium from the fencing and sparring hall, which is 40 by 75 feet. In this room are the lifting machines, dumb-bells, and other apparatus.

On leaving this room and entering a hall running east and west, the visitor comes to the main parlors, which front on Morton Street. There are two rooms, with folding doors and beautifully furnished. One has tables covered with papers and magazines and is to be used as a reading-room. The other is for public receptions and is fitted up with the most elegant furniture. Both these rooms are lighted by large bay windows opening on Morton Street. All the details of the rooms, the carpets, hangings, and chandeliers, are elegant and worthy of any residence. The taste of the ladies who have been consulted in these arrangements is unsurpassed. Ascending to the floor above by a broad stairway, the whole front on Morton Street is devoted to the billiard and chess-rooms. There are three new tables, with racks and cues, and in the chess-rooms are tables for eight or more players. Across the hall, which runs the whole length of the building, is the members' dressing-room. This lies directly over the fencing-room, and is about the same size. In here are bath-rooms, warm and cold water, showers and sprays, the private lockers of the members, water-closets, etc. There are also three rooms

where hot and cold baths can be taken at any time, and besides there are plenty of mirrors and all facilities for completing the toilet.

A feature of the gymnasium is the addition of a steam laundry, where the exercising clothes of the athletes are sent each day, and returned to the lockers the next morning carefully laundered.

The members of this club may be congratulated on the successful manner in which everything has been carried out by President Fletcher and Superintendent Lawton. With such attractions there should be a large accession to the number already on the roll.

The President, Mr. H. P. Fletcher, being a thorough business man, and seeing that the large outlay for fitting up the club so magnificently must be met by some more rapid accumulation of funds than will accrue through the dues of members, has devised a plan outside of club control for placing a certificate of life membership within the reach of those who choose to invest the price of one month's dues in the scheme: Each month 160 numbered tickets will be issued to those who subscribe their names, and the person holding the ticket corresponding to the number drawn from a hat, will receive a life membership certificate; yearly certificates will be given to the next six on the list. Thus the club's finances will be benefited about \$400 per month, and an equivalent in value will be given to the investors. A plan for admitting ladies to the privileges of the gymnasium on certain days will be discussed at the Directors' meeting.

The high road to national prosperity is attained through the devious paths of State education. A very important one of these is calisthenics.

Why should California not profit by these antecedents? They certainly come within the scope of the taxpayer's limit, and the utmost ambition of the *paterfamilias*. In fact, the State becomes the practical, essential father, while too often *paterfamilias* is the impotent factor. Having advocated the formation of an educational policy to insure order out of school, to repress hoodlumism, and to enforce the legislative law of compulsory education, we now suggest the creation of gymnasia as additional institutions to the public schools. One gymnasium could be adjoined to every school. In addition, a gymnasium might be built on every public plaza. At present, the plazas are only ornamental gardens and public ventilators. The addition of a work of hygiene could certainly do them no harm. It is the charm of gymnasia that all the boys like them. They all run for them; their exuberant spirits there find exhaustive employment. Their sports may be ever so bold, but being subject to a scientific and controlling discipline, can never eventuate in quarrels nor blasphemy. The great public benefit is that they are out of the streets, and exercise in safety. The advice and instruction they receive teaches good manners and the art to be a gentleman. Hence, gymnasia are practical schools of morals.

Enough has now been said to introduce the subject, and we respectfully present it to the consideration of the State Board of Health.

PUBLIC HYGIENE—THE IMPORTANCE OF FLANNEL UNDER-CLOTHING.

BY F. W. HATCH, M. D.

One of the duties assigned to the State Board of Health, by the Act of the Legislature authorizing its organization, is that of "taking cognizance of the interests of life and health among the citizens generally, * * * and making sanitary investigations and inquiries respecting the causes of disease, * * * gathering such information in respect to these matters as they may deem proper for diffusion among the people."

With these instructions in view, it has been considered not inappropriate to present a few general remarks in relation to some of the ordinary habits of life, especially the necessity of protecting the body at all seasons by suitable under-clothing. It seems somewhat strange, yet it is nevertheless true, that we are all of us most apt to overlook and neglect those things which are most familiar, and which, from frequent association, we are apt to consider trite and commonplace. We recognize the "weightier matters of the law," while the simpler precepts which affect every-day life are prone to be lost sight of. Of no one thing is this more true than that which is to form the subject of the present reflections.

In its consideration, it will be my endeavor to discard all nicely drawn anatomical or physiological descriptions pertaining to the skin and its functions, or to allude to them only so far as may be necessary for a proper understanding of the subject. The aim will be rather to deal with it in a practical manner, and with a degree of plainness which, while it may appear simple and commonplace to the physician, will be more likely to excite the interest and reach the comprehension of the public non-professional reader. For the benefit of such indeed the organization of Boards of Health is designed.

Yet, even for this purpose, a cursory allusion to the structure of the skin—the external investment of the body—will not be without interest. Briefly, then, the skin is composed essentially of two separate and distinct layers—first, the epidermis, or scarf-skin; second, the derma, the latter being divided into two layers or strata, or superficial or *papillary* layer, and a deep or *corium*. The former, or epidermis, is a secretion or product of the latter, hard and horny upon its external surface, and affording protection to the softer and more delicate structures beneath—the papillary layer of the *derma* with which it is in contact. It is subject to continual loss and renewal. As its exposed surface hardens under the influence of the atmosphere, it is continually being removed in bran-like scales, while new layers are constantly taking the place of that which is lost.

The *derma* or true skin is, for present purposes as well as anatomically, the more important. Through the *corium* or deep layer of this structure pass numerous blood-vessels and nerves to the *pap-*

illary or superficial structure, where they are distributed, their number, size, and arrangement differing in different parts of the general surface of the body. Commonly, they are exceedingly minute and delicate. A pin, made to enter the skin at any point, it is said, will wound one of these vessels and nerves. They are estimated at about two thousand eight hundred in each square inch.

This papillary layer, so rich in vessels and nerves, is extremely sensitive, and is readily affected by impressions made upon it through the epidermis. It plays an important part in inflammations of the skin and in the eruptive fevers, it being, in all probability, the organ or portion of the skin in which these fevers are localized or find expression. It is the seat, also, of that affection, so annoying in summer, known as nettle-rash or hives.

In addition to the vessels and nerves, we find in the *corium* certain glands, the most important, for present purposes, being the perspiratory glands—small, round or oblong bodies, having a duct or tube which rises through the derma and epidermis, and opens upon the surface of the latter by a small aperture or pore which permits the escape of the perspiration. The amount of water secreted and discharged from the body through these pores is enormous, varying with the temperature of the external air, with exercise, and with various other conditions both of health and disease.

Closely allied to the skin are the mucous membranes, forming an *internal investment* of the body, or, as they are often spoken of, the *internal skin*. The skin, *i. e.*, the *external covering* of the body, is merged at the orifices of the latter—as the mouth, for example—with the mucous membrane. At these points it passes, so to speak, into the latter, being essentially identical in structure. Thus considered, each individual layer of the skin may be said to have its representative or counterpart in the mucous membranes—the epidermis of the former in the epithelial layer of the latter; the derma, or cutis, in the proper tissue of the mucous membrane, or the *corium*, which is here again subdivided into two layers, *superficial* and *deep*, the latter containing, like its representative in the skin, papillæ with blood, and lymphatic vessels; and, lastly, the subcutaneous, in the sub-mucous tissue. These two membranes, moreover, have similar offices to perform—offices differing only according to the different physiological functions which devolve upon them.

It is a fact familiar to every physician, and usually appreciated by those outside of the profession, that *sudden* changes of temperature are frequently followed by disease. We hear this recognition expressed almost daily by complaints of having “taken cold”—“this sudden change in the weather has given me a cold;” we observe it in our children during infancy, by the frequency of one form of croup, and, at all ages, by the occurrence of catarrh, or slight cough. These things are especially coincident with a change from a high to a low temperature. Such a change, even when gradual, when brought about by removal of the residence from a warm to a cold climate, is recognized as a cause of certain serious affections—the cold air acting as a depressant to the nervous system and functions of the skin and lungs, occasioning not only pulmonary troubles, exciting to pulmonary consumption in those predisposed thereto, but throwing a vastly increased work upon the internal mucous surfaces.

If these things arise from changes gradually brought about, it is

By an examination of the above table, it will be apparent that the period of the greatest deviations of temperature between the hottest part of the day and the night minimum is during the summer months, the range of the thermometer having been 30° , or over, during one hundred and thirty-nine days out of the one hundred and eighty-four days between May 1st and October 31st, 1877; while the days on which the difference amounted to 40° , or over, were during May, June, July, August, and September, the total number of days on which this extreme range was observed having been *twenty-eight*. It is not necessary, for present purposes, that these great deviations of temperature should be uniform, occurring every day. In fact, so far as concerns the argument in favor of proper protection of the body by woolen under-clothing, it is all the more forcible by reason of this non-uniformity, for then the needful precautions are more liable to be neglected. A danger expected is apt to be guarded against; it is only when sudden or exceptional that it finds us unprepared. Even 40° do not represent the greatest deviation which the daily observations exhibited. Upon several occasions it reached 44° , and even 48° .

It can be easily understood, when we consider the intimate relation existing between the external skin and its internal representative, the mucous membranes—when we consider, also, the vascular and nervous connections which it sustains to the internal viscera—how great a shock to the system such a change will occasion with those exposed to its influence unless suitably protected; how bronchial and pulmonary disease may be excited; how diarrhœal affections may be induced; how the secretions of other organs, such as the liver or kidneys, may be deranged.

By the table is also shown the relative humidity for each month. Saturation of the atmosphere being expressed by 100, we find a decided change in the percentages between 2 P. M. and 9 P. M.—an average difference of about *sixteen* for the six months from May to October. When we consider the relation between the temperature of the atmosphere and its capacity for moisture, it will be well understood how much nearer saturation it becomes during the evening, and how much more likely, *cæteris paribus*, to be an exciting cause of disease. By a sudden fall of temperature the water of the atmosphere, existing in a state of vapor, is condensed, and is much more sensitively felt than the same amount of moisture in a high temperature.

Among other diseases than those already alluded to, which not infrequently owe their origin to the causes above referred to, may be mentioned rheumatism, particularly muscular rheumatism, and neuralgia. In cholera seasons there has often been observed a close connection between an attack and sudden refrigeration of the surface of the body. So firmly convinced of this fact were the physicians of some parts of the country during the early years of this disease, that it was the custom to recommend to the people to constantly wear a large *pitch plaster* over the abdomen, even during the hottest weather, as a protection against sudden atmospheric changes. From this same cause, also, it is not uncommon to notice an attack of ague to supervene in those predisposed by residence in a malarial district.

Bearing these facts in mind, we may readily perceive the importance of even the commonplace and unattractive subject which we have ventured to present. If every individual could change his

clothing whenever the weather changes, keeping a constant watch over the sudden transitions from heat to cold, or prepare himself for the more gradual deviations which occur as the day lapses into night, the necessity for woolen under-clothing, though not altogether removed, would not be quite so urgent. Yet, in the very nature of things—in the conditions inseparable from the business and social relations of man—such a degree of prudence is almost impracticable. Under-clothing, therefore, besides being under all contingencies the most suitable and conducive to health, becomes indispensable.

The object of clothing, as it affects the present subject, is not so much to keep the cold out as to keep the heat in. The body contains within itself, within certain limits, the means of maintaining a uniform, or nearly uniform, amount of heat. The processes of waste and repair which are forever going on in the living organism are those also for the manufacture of heat. It contains within itself a furnace forever active, continually fed by the process of respiration, and by the food ingested. The external air, when of a lower temperature than the body, is constantly abstracting a certain amount of this heat. One of the objects of clothing is to prevent its too rapid dissipation or radiation. Much depends upon the nature of the fabric, and the amount of air it can retain. All the varieties of clothing in common use are, more or less, porous—a quality depending upon their elasticity; they contain, within the fabric, interstices larger or smaller according to the materials of which it is composed. The interspaces in woolen goods are large, those in cotton next, and those in linen smaller. Hence woolen clothing is capable of retaining within its meshes or interspaces a larger amount of air, and is consequently warmer than other fabrics; hence, too, in addition to the stratum of warm air between the clothing and the skin, we have the additional protection of the air inclosed within the fabric, and this air, once warmed by artificial means or by abstraction of heat from the body, maintains a partial equilibrium between itself and the latter, and is but slowly given off to the atmosphere without (Wagner, Pathology, etc.). Moreover, this air, being heated, receives the first impression of a sudden change of temperature, and thus protects the body from a too rapid withdrawal of its own caloric. The advantage of such a protection will be evident when we consider the sudden variations of temperature to which it has been shown that the valleys of California are subject during the summer months.

Some of the principles just alluded to are important in their application to clothing when damp, as it may often become in summer by means of perspiration. We "catch cold" when the clothing is wet, because the air inclosed within the pores or interspaces of the fabric is displaced by water, and the latter is a better conductor of heat than the former, and the effect is probably heightened by the facility afforded for evaporation by different fabrics. It has been shown by experiments conducted by Pettenkoffer, that this process is much more rapid from linen than from wool. The pores of the former become almost impervious to air when wet, and the same is true of cotton and silk, while woolen fibers retain their elasticity and porosity. "It is," says Wagner, "because the air is more driven out of linen or silk fabrics than out of woolen ones that we catch cold more easily by being wet while clothed in linen or silk."

It needs no nice experiment to demonstrate the facts spoken of.

We all know from experience how uncomfortable linen or cotton clothing becomes when wet, while woollen, containing an equal amount of water, may be worn, comparatively, without discomfort.

If what has been said upon the structure and functions of the skin, and what might be called the *theory* of clothing, has been made sufficiently clear, the great importance of the subject, in a sanitary point of view, will be apparent. The principles apply to all classes and to all ages, for though some may be able to resist the common consequences of their neglect, there are few whose health would not be more assured by their observance—few so robust that they may not fall victims to imprudence. But it is to the young, to infants, upon whose sensitive organizations impressions such as have been alluded to fall with peculiar force, that the question of clothing becomes of paramount importance; it is to that large class met with in every community, youths of delicate constitution, inheriting, perhaps, a tendency to pulmonary disease, or tainted, possibly, with the seeds of scrofulosis, that this subject appeals with peculiar force. It is at this period of life, if ever, that the constitution of the individual is to be strengthened, the external exciting causes of disease guarded against, and the health fortified by every precaution which prudence can suggest. There is no greater fallacy, at least as to the methods commonly adopted, and as we so often see it practically exemplified, than the prevalent idea of “hardening” a delicate organization. Two results are usually attained by it—the naturally robust *may* survive—the weak, perish; but how many of the latter may have lived, and, under more judicious physical culture and wiser hygienic management, have grown up to vigorous manhood, the advocates of the “hardening system” fail to tell us. Perhaps the disciples of Darwinism might see in it another result—the confirmation of the theory of selection.

The cautions alluded to above are especially applicable to young infants. At this stage of life the animal heat—the normal standard of heat—is more speedily lost upon exposure than in later years. They become chilled under exposures scarcely perceptible to the adult, and the effects are often noticed in the pinched features, the bluish extremities of the little creatures thus cruelly jeopardized. Yet how often do we see mothers clad themselves in wool and furs, leading their young children, clothed in garments which fashion may have dictated, but which leave the upper portion of the chest and the extremities uncovered. Is it surprising, when such indiscretions prevail, that croup, bronchitis, and pneumonia still claim their victims from this tender and susceptible age? Flannel underclothes—coverings for the chest and abdomen, and drawers or leggings for the extremities—would prove the means of averting much physical suffering and many of the maladies to which children are subject.

The clothing, in all cases, should be adapted to the temperature and its vicissitudes; it should be lighter in summer than in winter, and sufficiently loose to permit the free play of the organs, and to excite, by friction, a healthful stimulation to the skin. Such precautions are particularly necessary in windy or in damp weather; in both, there is a more rapid dissipation of heat, in consequence of the constant change of air surrounding the body in the one case, and the heightened conducting power of the atmosphere in the other.

SAN LUIS OBISPO COUNTY HOSPITAL.

[The following report of the Hospital in San Luis Obispo County, having been received after the body of this report had been made up, is inserted in the Appendix.]

REPORT TO THE STATE BOARD OF HEALTH OF THE INDIGENT SICK,

Treated in the San Luis Obispo Hospital, for the four months ending June 20th, 1879.

NAME AND LOCATION OF HOSPITAL.	Number of Months Reported	Total Admitted	Discharged Cured	Discharged	Died	Percentage of Deaths	Remaining under Treatment	Physician's Name and Post-office Address.
San Luis Obispo Hospital	4	22	10	10	1	5	11	W. W. Hays, M. D., San Luis Obispo, California.

Until within the last eight or ten years (the county being sparsely populated), there were comparatively few indigent sick, and the Board of Supervisors considered and relieved each individual case; but with increasing population the demands for public charity became more frequent, and it was necessary to adopt some more permanent plan for relief. After various experiments a contract was made with a physician, who was to attend professionally, board, and furnish medicines to the indigent sick for two dollars and a half per day each. After some time (about two years), the contract price was reduced to one dollar and a half per day for the sick, and eight dollars per week for convalescents. This was in force when the new hospital was opened. Paupers, not sick, were boarded out at from five dollars to eight dollars per week.

In the meantime the Board of Supervisors were taking steps to secure for the indigent sick such permanent relief as increasing population and advancing civilization made necessary.

In the year 1869 the United States Government granted to the Town of San Luis Obispo a patent for a certain number of acres of land for "the benefit of the actual occupants." At that time the county was in possession of two blocks of land, on one of which was an old building used as a Court-house, and on the other a Jail. These two blocks were deeded by the town to the county. In the year 1873 the county purchased another lot and erected thereon a new Court-house and Jail, and when the new buildings were completed the Board of Supervisors ordered the old county property to be sold, and the amount received from the sale to be set aside "for the purpose of forming a fund to be used in constructing a County Hospital." The amount realized was \$8,225 15, with two lots still unsold. This money was subsequently borrowed from the Hospital Fund, placed

in Current Expense Fund, and expended. Nevertheless, the amount is justly due to the Hospital Fund, with interest. Last year, 1878, the Board of Supervisors decided to erect a hospital, and appointed a committee, consisting of Mr. C. W. Dana, Dr. French, and myself, to adopt a plan, and afterwards to superintend its construction. After its completion the Board appointed a committee, Dr. French and myself, to visit such counties as we considered necessary to examine the method of taking care of the indigent sick and the management of county hospitals, and report. We visited and investigated Santa Clara, San Mateo, and San Francisco, and reported a plan for the management and furnishing this hospital, which the Board adopted. In everything connected with the hospital and the care and maintenance of the indigent sick, the Board of Supervisors have shown an enlightened liberality not usually found nowadays among such bodies. They have spared neither time nor trouble to do whatever seemed best for the county, and have quietly endured a large amount of misrepresentation and abuse.

The hospital was opened for the reception of patients the 23d of February, 1879. It is situated upon a hill, about a mile to the southeast of the Town of San Luis Obispo, at an elevation of about one hundred and fifty feet above the plain and two hundred and seventy-five feet above the level of the sea, which is about ten miles due west. There are two chains of mountains or high hills, with intervening valleys, which run parallel to the sea-shore, between the town and the ocean. Back of the town and to the east the Santa Lucia Mountains rise abruptly to an elevation of three thousand feet.

The hospital grounds contain about twelve and one-half acres. The soil where the buildings are erected is a sandy loam, with bed-rock of recent sandstone from two to two and one-half feet below the surface. At the lower end of the field the soil is adobe. A ravine bisects the place and is utilized for drainage. Where the sandstone formation ends and the adobe begins several springs break out from below the sandstone. They are not used, however. Water is supplied in abundance from a spring on the mountain-side back of the hospital, about two thousand yards distant, and one hundred and twenty-five feet above the level of the buildings.

The plan of the hospital is substantially that recommended in the third report of the State Board of Health. It consists of a two-story executive building thirty-four by twenty-four feet, a kitchen and dining-room twenty-one by thirty-six feet, separated from the main building by a corridor ten feet wide, and one ward seventy-five by twenty-five feet. The plan adopted by the Board of Supervisors provides for two similar wards, one on each side of the main building. One only has been constructed. The other will be when necessary.

The main building has four rooms down stairs and four up stairs; those on the front twelve by fifteen feet, those to the rear twelve by fourteen feet. The ceilings down stairs are fifteen feet high; those above are twelve feet high. There are in each room two large windows, an open fire-place, and a closet.

The kitchen building has a dining-room fifteen by twenty-one feet, a kitchen fourteen by twenty-one feet, with butler's pantry, place for range, and store-room between. The ceiling is fifteen feet high.

The ward has a large room in the center, forty-seven by twenty-five feet, ceiling sixteen feet high, with nurse's room ten by seventeen feet

on one side of the entrance, and bath-room and linen closet, each ten by eight and a half feet, on the other side. At the rear a sitting room ten by sixteen feet, and a small bedroom ten by eight and a half feet.

There is an open fire-place at each end of the ward, four large windows (which let down from the top) on each side, and four ventilators in the ceiling. Upon the roof of the building (and also of the kitchen) is a "ridge" ventilator, twelve feet long, four feet high, also lattice windows in each end of the gable, so as to secure a free circulation of air above the ceiling and below the roof.

The floor is three feet above the surface of the ground, the space under the floor being ventilated by eighteen lattice windows. The ward is connected with the main building by a covered corridor ten feet wide, and is twenty-five feet distant from the kitchen. There are outside blinds to all the windows in the hospital.

The hospital is constructed of redwood—studding four inches, lathed and plastered with two coats, and calcimined. The wood-work is all plain finish. The floors are of well seasoned lumber, and when built were saturated with a solution of beeswax and rosin in linseed oil, put on boiling hot.

Thirty-nine feet to the rear of the kitchen is a small building used as a laundry, with stationary wash tubs, and hot and cold water, and a wood-shed. Twenty-seven feet still farther back, are two privies. They are placed over pits six feet deep, and are so constructed that they may be removed when the holes are full. Dry dirt is emptied into each vault once a week, and sulphate of iron every other day.

This modification of the dry dirt system was adopted after mature consideration as being the best method of getting rid of the excrementitious matter. The water-closet system was rejected because of the difficulty of disposing of the increased sewage which it entails, without injuring neighboring property. Dry excrement is comparatively innoxious; freely dissolved in water, and permitted to decompose in the inequalities of the tortuous channel of a ravine under a summer sun, it is liable to become a source of disease.

To the rear of the privies is a poultry-house and cow-yard. The grounds have been subdivided into pasture fields and a vegetable garden, and the approach to the buildings has been graded, and grass plots, etc., laid off. Some ornamental trees and shrubs have been planted. The design of the committee has been, however, to plant in the hospital grounds, as far as possible, such trees, shrubs, and flowers as are natives of the county. This plan could only be partially carried out this year, as the season was somewhat advanced when the building was completed.

The water supply is abundant and good. The waste water from the laundry, kitchen, sinks, and bath-room is conveyed in a four-inch galvanized iron pipe to the ravine, one hundred feet from the building, and is there absorbed by *reeds*, which have been planted in the bed of the gulch. This method of disposing of waste water I have used very successfully in my own yard for some years past. (I have had constructed a loose-jointed box or drain, placed about a foot below the surface of the soil, with laterals every eighteen feet, and have planted a tree at the terminus of each lateral. The trees grow luxuriantly, and there is no waste water.)

Every connection with the main sewer is trapped. The rain-water conduits from the kitchen and ward are connected with the sewer,

and a special ventilator (a three-inch tin pipe) joins the main sewer, where it emerges from beneath the ward, and runs up above the building.

The hospital is in charge of a physician, who receives fifty dollars per month. There is a Superintendent, on a salary of forty dollars per month, a cook and nurse at twenty-five dollars per month each.

The total expense for the first four months for subsistence, including wood, washing, liquors, vegetables, etc., everything, except salaries and medicines, was three hundred and forty-two dollars. The average number of persons fed was fourteen, making the cost per person about six dollars per month.

The hospital is furnished with gas-pipe, iron bedsteads, with strap iron bottoms. With each bed there is a straw mattress, a hair mattress, four sheets, two pillows, a pair of blankets, a counterpane; also commode, chair, chamber, and cuspidor.

Contract price for building hospital	\$5,966 00
Out-buildings	175 00
Price of land, twelve and one-half acres	850 00
Furnishing, plumbing, water supply, etc.	1,522 00
Total cost	\$8,513 00
Amount which ought to have been in the Hospital Fund from sale of land	\$8,225 15
The amount expended for indigent sick in 1875	2,419 00
The amount expended for indigent sick in 1876	4,412 25
The amount expended for indigent sick in 1877	2,769 83
The amount expended for indigent sick in 1878	4,166 00
The tax levy for indigent sick, 1877 (first time)	7
The tax levy for indigent sick, 1878	10

From the statistics on the last page, it appears that the total cost of the hospital was only two hundred and eighty-eight dollars more than the county received from the sale of land donated to the county by the town, and there are two lots still unsold. Too much credit cannot be given to Mr. C. W. Dana, who has for years contended for the erection of the County Hospital.

Respectfully, your obedient servant,

W. W. HAYS.

In relation to this hospital, Dr. H. Gibbons, having visited San Luis Obispo, adds the following:

So far from finding in or about the hospital at San Luis Obispo anything to censure, I was surprised at the excellence of the building and its management. It would be impossible to have a private dwelling in a better sanitary condition. Everything was clean and in order, and the drainage is perfect. Like the new hospital of Los Angeles, this, also, is due to the determined efforts of members of the medical profession. The cost of the indigent sick to the county is much reduced by the new arrangement. A complete meteorological record is kept by the Superintendent, under the instruction of Dr. Hays, and a summary of it published every week in the San Luis Obispo Tribune. I send herewith a history of the hospital, with a statement of expenses, etc., kindly furnished by Dr. Hays,

who appears to be devoted to the institution and to take as much interest in it as he could do in his own home.

There is one great evil which demands speedy attention by the authorities. The river runs directly through the city in a narrow and deep channel, and is entirely dry during the summer and autumn. All the offal and drainage from either side runs into the dry channel, where there is always an accumulation of offensive filth during the dry season. The wonder is that disease has not been generated from this source. Sooner or later the citizens will realize some disastrous results if the nuisance be allowed to continue. But the remedy is not an easy task. The channel is fifteen or twenty feet deep and forty or fifty wide, with almost perpendicular sides. In winter it is filled by the heavy rains and becomes a rushing torrent. It might be possible to construct a sewer or some sort of conduit in the bed of the river, with strength to resist the current. But this is a subject for the inhabitants to take in hand.

My impressions of the climatic and topographical conditions of this county were highly favorable to it in a sanitary point of view. The records kept at the hospital mark an equability of temperature, an absence of extremes, and a range at the point of the scale conducive to comfort and health. My acquaintance with the subject does not warrant a confident judgment; but I am inclined to the opinion that this county is not excelled by any other district in the State in its favorable influence in various forms of pulmonary disease. Besides, there are mineral springs in different quarters, the waters of which possess qualities decidedly beneficial both for internal and external use.

NAMES AND RESIDENCES

Of the Regular Correspondents of the State Board of Health, and of others whose contributions have assisted in the preparation of this Report.

Names.	Residences.
Dr. D. Ream	Yreka, Siskiyou County.
Dr. W. H. Patterson	Cedarville, Modoc County.
Dr. C. L. Anderson	Santa Cruz, Santa Cruz County.
Dr. C. B. Bates	Santa Barbara, Santa Barbara County.
Dr. F. Delmont	San Buenaventura, Ventura County.
Dr. O. S. Eddy	San Buenaventura, Ventura County.
Dr. H. S. Orme	Los Angeles, Los Angeles County.
Dr. E. A. Kunkler	Placerville, El Dorado County.
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Dr. B. S. Young	Santa Rosa, Sonoma County.
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Dr. M. C. Parkison	Antioch, Contra Costa County.
Dr. F. C. Durant	Folsom, Sacramento County.
Dr. M. Baker	Visalia, Tulare County.
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Dr. W. C. Baylor	Willows, Colusa County.
Board of Health	Colusa, Colusa County.
Dr. W. T. Bell	Winters, Yolo County.
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Dr. R. F. Rooney	Colfax, Placer County.
Dr. Geo. S. Farley	North San Juan, Nevada County.
Dr. G. W. Davis	Chico, Butte County.
Dr. W. R. Fox	San Bernardino, San Bernardino County.
Dr. W. W. Hays	San Luis Obispo, San Luis Obispo County.
Dr. G. L. Simmons	Sacramento, Sacramento County.
Dr. K. D. Shugart	Riverside, San Bernardino County.
Dr. J. T. Wells	Bakersfield, Kern County.
Dr. W. C. Jones	Grass Valley, Nevada County.
Dr. G. W. Westlake	Red Bluff, Tehama County.
Dr. F. Walton Todd	Stockton, San Joaquin County.
Dr. H. F. McCormack	St. Helena, Napa County.
Dr. H. M. Kier	Knight's Landing, Yolo County.
Dr. John W. Reins	Creseent City, Del Norte County.
Dr. James Frost	Vallejo, Solano County.
Dr. T. C. Stockton	San Diego, San Diego County.
Dr. W. C. Hook	Oakland, Alameda County.
Board of Health	Sonora, Tuolumne County.
Dr. Walter Lindley	Los Angeles, Los Angeles County.
William Bassett, C. E.	Sacramento, Sacramento County.
Dr. J. B. Gordon	Santa Rosa, Sonoma County.
Dr. Martin Baker	Visalia, Tulare County.
Dr. L. S. Rogers	Bakersfield, Kern County.
T. W. Morgan, C. E.	Oakland, Alameda County.
Dr. Lewis Leach	Fresno, Fresno County.
Dr. G. A. Shurtleff	Stockton, San Joaquin County.
Dr. E. T. Wilkins	Napa, Napa County.

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EIGHTH BIENNIAL REPORT

OF THE

Superintendent of Public Instruction

OF THE

STATE OF CALIFORNIA,

FOR THE

SCHOOL YEARS OF 1878 AND 1879.

"All political and social controversies concentrate finally in the question of education, but not only in regard to what must be done in detail and immediately, but more universally still in this, what is the true education, the education worthy of the human being."

"The primary principle of education is the determination of the pupil to self-activity."—[Sir Walter Hamilton.



SACRAMENTO:

STATE OFFICE : : F. P. THOMPSON, SUPT. STATE PRINTING.

1879.



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REPORT.

To His Excellency, Honorable William Irwin, Governor of California:

I have the honor to submit, through you, to the representatives of the people of this State, the Eighth Biennial Report upon the condition of the Public Schools, for the school years ending June 30th, 1878 and 1879.

Very respectfully yours,

EZRA S. CARR,
Superintendent of Public Instruction.

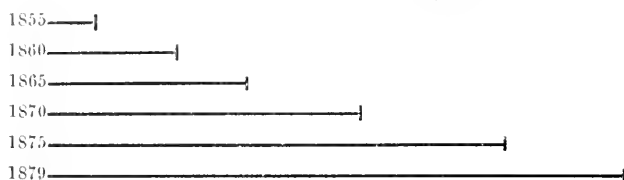
SACRAMENTO, October 1st, 1879.

GROWTH OF SCHOOLS IN SEVERAL IMPORTANT PARTICULARS.

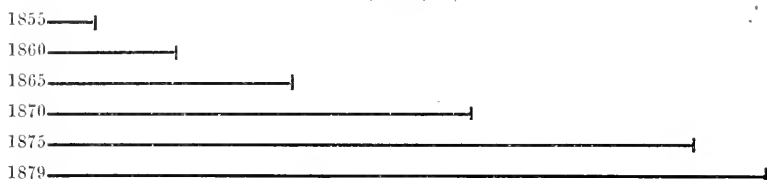
YEAR.	No. of Schools.	Attendance.	No. of Census Children.	Amount Paid Teachers.
1855	227	13,000	26,077	\$181,906 00
1860	593	26,993	57,917	311,165 38
1865	947	50,089	95,067	526,585 00
1870	1,492	85,808	121,751	976,937 75
1875	2,190	130,930	171,563	1,810,479 62
1879	2,743	144,806	216,404	2,285,732 39

DIAGRAMS REPRESENTING THE ABOVE FACTS TO THE EYE.

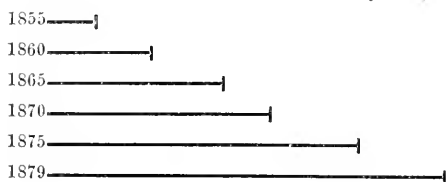
NUMBER OF SCHOOLS.

 $\frac{1}{4}$ inch, 227.

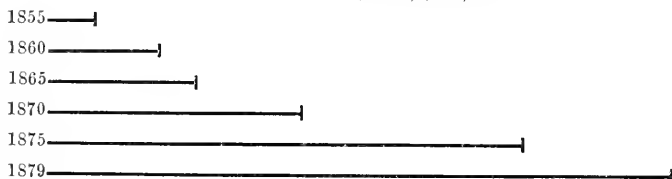
SCHOOL ATTENDANCE.

 $\frac{1}{4}$ inch, 13,000.

NUMBER OF CENSUS CHILDREN.

 $\frac{1}{4}$ inch, 26,077.

SALARIES PAID TEACHERS.

 $\frac{1}{4}$ inch, \$181,906.

PART I.—INTRODUCTORY.

INTRODUCTORY REMARKS.

The growth of the schools during the past thirty years, as represented to the eye upon the opposite page, is a record of which we have reason to be proud. The Constitution of 1849, like those of nearly all the States, was based upon this fundamental principle: "*That it is the duty of a republican government, as an act of self-preservation, to educate all classes of the people, and that the property of the State should be taxed to pay for that education.*"

Summarizing, we find that up to the present time the people of California have devoted to the cause of public education, in money—

For public schools, about	\$33,743.819 84
State Normal School, about	566,600 00
State University, about	4,150,000 00

This is the price which the Golden State has been paying for an honorable position in respect to public education.

Macauley, in 1847, when pleading the cause of popular education before the House of Commons, said: "*Educate the people*, was the first admonition addressed by Penn to the commonwealth he founded; *educate the people*, was the last legacy of Washington; *educate the people*, was the unceasing exhortation of Jefferson. Yes, of Jefferson himself, and I quote his authority with peculiar favor, for of all the public men that the world ever saw, he was the one whose greatest delight it was to pare down the functions of governments to the lowest possible point, and to leave the freest possible scope for the exercise of individual rights."

"The first people is that which has the best schools; if it is not so to-day it will be to-morrow." The education of the entire people is not only a matter of duty but of public policy. *Less than one-sixth of the illiterate voters* of the United States are a large majority in a Presidential election. The progeny of a single illiterate and depraved woman of the State of New York has cost more in taxes than the education of a hundred thousand children.

This is a work in which there can be no halting or turning back. We have reached a moment in our State history when the only safety is to hold fast that which is good, to move on in the advancing column without halting, without rest. I cannot better express my profound concern, in view of the crisis in our educational affairs, than in the words of Professor Huxley, spoken in his address to the citizens of Baltimore: "Size is not grandeur, and territory does not make a nation. The great issue, about which hangs a true sublimity and the terror of overhanging fate, is, what are you going to do with these things? What is the end to which these are to be the means? As population thickens in your cities, and the pressure of want is

felt, the gaunt spectre of pauperism will stalk among you, and communism and socialism will claim to be heard. Truly America has a great future before her, great in toil, in care, and in responsibility; great in true glory, if she be guided in wisdom and righteousness; great in shame, if she fail. The one condition of success, your sole safeguard, is the moral worth and intellectual clearness of the individual citizen." I would add to this another equally indispensable condition, viz., the *industrial capacity*, or self-maintaining power, of every citizen, through which alone the moral worth and intellectual clearness of the masses must find expression.

The most strongly marked educational tendency of the time is toward such reform as will give the ability to use and apply the knowledge gained in the schools. It demands that schools shall be more practical, that culture studies, however valuable to the few, shall give way to wage-earning studies, which are indispensable to the many, that "the three R's power" education is not enough for the great class of producers, that the proper differentiation which marks advance in any direction demands the establishment of special schools for these classes. This view is justified by the accounts which are given in the following pages of technical, arts, and trades schools in Europe. It is further corroborated by the fervent heat of discussions in national and State associations, in which the "broadening of the intellectual powers" party so often silence, but fail to convince, those who advocate bringing the education of head and hand into one system of training. The argument for the high school applies equally to any school which leads the pupil to the threshold of a special pursuit.

Another marked tendency of modern education is toward the improvement of methods of instruction in primary schools.

The last report of the Commissioner of Education contains notices of one hundred and forty Kindergartens; Froebel's motto, "Let us live for the children," is now heard in many tongues, and has reached even the Oriental nations.

Formerly, the nation which possessed the most famous colleges and universities was accorded the highest educational honors; to-day these are with one consent bestowed upon that one which lays the broadest foundations for universal popular intelligence.

Statistics show that in Turkey, Ecuador, and Bolivia, only one per cent. of the population are in primary or elementary schools.

In Russia, Brazil, Servia, Mexico, and Peru, two per cent.

In Chili, four per cent.

In the Argentine Confederation and in Greece, five per cent.

In Italy, six per cent.

In Hungary, seven per cent.

In Spain, nine per cent.

In Great Britain, twelve per cent., divided as follows: Ireland, eight; England, twelve; Scotland, thirteen.

In Norway, twelve; in Sweden and in France, thirteen per cent.

In Germany, fourteen per cent.

In Switzerland, fifteen per cent.

In Canada and the United States, seventeen per cent.

A comparison is given below of the educational status of the different States in the Union, based upon the United States Report of 1876-7:

STATES.	School Population.	Average Attendance.	Percentage of Average Attendance on School Population.
California	184,787	83,391	45.07
Colorado	21,962	8,043	36.62
Connecticut	135,189	70,495	52.14
Florida	74,828	16,720	22.34
Georgia	394,037	115,121	29.22
Indiana	679,230	314,168	46.25
Iowa	553,920	229,315	41.40
Kansas	212,977	89,896	42.28
Kentucky	498,744	156,000	31.28
Louisiana	274,688	52,315	19.05
Maine	218,490	102,451	48.00
Maryland	276,120	73,069	26.46
Massachusetts	300,834	218,903	72.76
Michigan	459,847	200,000	43.57
Missouri	725,728	182,000	25.09
Nevada	8,475	3,832	45.09
New Hampshire	74,747	48,857	65.36
New Jersey	314,826	103,520	32.88
New York	1,585,601	541,610	34.15
North Carolina	348,603	97,830	28.06
Ohio	1,025,635	447,139	43.57
Oregon	48,473	15,565	32.11
Pennsylvania	1,200,000	578,718	48.23
Rhode Island	53,316	28,608	53.65
Tennessee	434,131	125,908	29.00
Texas	313,061	125,224	40.00
Virginia	482,789	115,243	23.87
West Virginia	184,760	72,278	39.12

FOUNDATIONS AND ENDOWMENTS.

THE FOUNDATIONS.

The *foundations* of our State system of free public education were begun at Monterey in 1849, by the adoption of Article IX of the Constitution, which provides—

SECTION 1. A Superintendent of Public Instruction shall, at the special election for judicial officers, to be held in the year 1863, and every four years thereafter, at such special elections, be elected by the qualified voters of the State, and shall enter upon the duties of his office on the first day of December next after his election.—[Amended, 1862.]

SEC. 2. The Legislature shall encourage, by all suitable means, the promotion of intellectual, scientific, moral, and agricultural improvement. The proceeds of all lands that may be granted by the United States to this State for the support of schools, which may be sold or disposed of, and the 500,000 acres of land granted to the new States, under an Act of Congress distributing the proceeds of the public lands among the several States of the Union, approved A. D. 1841, and all estates of deceased persons who may have died without leaving a will or heir, and also such per cent. as may be granted by Congress on the sale of lands in this State, shall be and remain a perpetual fund, the interest of which, together with all the rents of the unsold lands, and such other means as the Legislature may provide, shall be inviolably appropriated to the support of common schools throughout the State.

SEC. 3. The Legislature shall provide for a system of common schools, by which a school shall be kept up and supported in each district at least three months in every year; and any school district neglecting to keep up and support such a school, may be deprived of its proportion of the interest of the public fund during such neglect.

SEC. 4. The Legislature shall take measures for the protection, improvement, or other dispo-

sition of such lands as have been or may hereafter be reserved or granted by the United States or any person or persons, to this State, for the use of a University; and the funds accruing from the rents or sale of such lands, or from any other source, for the purpose aforesaid, shall be and remain a permanent fund, the interest on which shall be applied to the support of said University, with such branches as the public convenience may demand, for the promotion of literature, the arts and sciences, as may be authorized by the terms of such grant. And it shall be the duty of the Legislature, as soon as may be, to provide effectual means for the improvement and permanent security of the funds of said University.

The gifts of the general government to the State were amply sufficient, had they been wisely cared for, to have given free elementary education to every child, without resorting to taxation. But only a small part of the amount required for the maintenance of the schools or of the University is derived from the proceeds of national or State endowments.

The frauds upon posterity, committed under cover of law in the management and sale of school lands, have been too well known to need comment; and here, as in other States, where the same evil has prevailed, the State school tax should be looked upon in the light of a distribution to the children of the State of their lawful inheritance, which has been held in trust by the people. To impress more strongly the justice of this view, it may be well to repeat the statement made in the Appendix to my last biennial report concerning the magnitude of

THE ORIGINAL ENDOWMENT FOR PUBLIC EDUCATION.

This consisted:

First—Of the 16th and 36th sections in each township, "or indemnity therefor in cases where the State cannot perfect her title on account of Spanish grants or prior sales." *This grant comprises one-eighteenth of the land in the State, or an aggregate of about 6,000,000 of acres. About one-third, or 2,000,000 of acres of this land, is located within the mineral belt.* By the decision received from the General Land Office, April 7th, 1877, "the discovery of the mineral character of the land in Sections 16 and 36, subsequent to survey, does not defeat the title of the State to the same as school land."

Second—Five hundred thousand acres for the purposes of internal improvement.

Third—Seventy-two sections, or 46,080 acres, for the use of a seminary of learning.

Fourth—Ten sections for the erection of public buildings.

Fifth—One hundred and fifty thousand acres for the benefit of agriculture and the mechanic arts.

What has become of this vast estate, which, under the old Constitution, was made the duty of the Legislature to protect, improve and dispose of inviolably for the promotion of the intellectual, scientific, moral, and agricultural improvement of the people?

The two first named grants were applied to the uses of the common or public schools; the remaining three, with additional revenues derived from the sale of swamp lands, to the maintenance of the University.

In the year 1851 John H. Marvin, the first Superintendent of Public Instruction, estimated the prospective School Fund to be derived from the sale of the 500,000-acre grant and of the 16th and 36th sections, as not less than \$7,975,400. He says in his report "Truly this is a magnificent bequest, worthy of the Golden State."

In 1852 Honorable Frank Soule, Chairman of the Senate Committee on Education, strenuously endeavored to pass a bill which provided that the 500,000-acre grant should be located by the State Board of Education, and held until the land should sell for a reasonable price. "But there was a big land speculation in the eyes of some members of the Legislature, and so the policy prevailed of selling these lands at \$2 25 per acre, payable in depreciated State scrip. The total amount realized from this magnificent land grant was only about \$600,000. It might have been made at least two or three millions." (History of the Public Schools of California, by John Swett.)

The State Land Commissioners, in their report, say :

The 16th and 36th sections of land in each township which were granted to the State by the United States for the purpose of public schools: also, *indemnity lands* (so-called), being lands in lieu of 16th and 36th sections to which the State became entitled by reason of the loss of the 16th or 36th sections of any township, under the provisions of the Act of Congress, approved March 3d, 1853, granting the 16th and 36th sections, or lands in lieu thereof, to the State. (10 U. S. Stat. at Large, 244.)

The two classes of land above named have constituted by far the largest amount of land which has inured to the State under any one Congressional grant, and the State has sold and disposed of a much larger quantity of land, by virtue of this grant, than any other, and, perhaps, than all the others combined.

Under this grant there has accrued to the State one-eighteenth of all the public lands surveyed by the United States in California, amounting to 2,312,653 acres. In addition to this, the records of the Surveyor-General's office now show that there has been, up to the present date, listed and certified over to the State by the United States, about 650,000 acres of land in lieu of 16th and 36th sections, and as indemnity for such last named sections where the same have become lost to the State by reason of being embraced by Spanish or Mexican grants, preëmption, and other private claims.

A very large amount of indemnity land has been sold and disposed of by the State which has not yet been certified over by the United States to the State—an amount equal to, or perhaps greater than, that so certified.

It may be proper to state that in the case of the disposal of the 16th and 36th sections in place, no certification or listing is required, as the purchaser takes title directly from the State by virtue of the Congressional grant. But in case of land selected in lieu of a lost 16th or 36th section, one not in place, such indemnity selection must be approved and certified over to the State by the proper authorities of the United States before the State purchaser can acquire an absolute and perfect title from the State. It further appears that under this grant there will yet accrue to the State, of the public land to be surveyed, 2,589,500 acres.

Had the State of California, in disposing of this inheritance of her children, protected the settler instead of the speculator, we should not be hearing to-day complaints of the cost of our schools. But so well was the machinery oiled to effect the gobbling of these lands, that a Governor could say in his message, "Our land system seems to be mainly framed to facilitate the acquisition of large bodies of land by capitalists or corporations, either as donations or at nominal prices."

Capital was not needed when a combination between lawyers, legislators, and speculators would enrich all three at the expense of the settler and of the great future of the State.

By the payment of five dollars a whole section of United States land could be shut up from the settler. By a State law of March 8th, 1868, which repealed all previous laws, all restrictions of amount or use, *except as to the 16th and 36th sections of public lands*, were swept away. But with respect to these, the applicant was not required to swear that he wanted the land for settlement or for himself. The settlers upon these sections, under the law, could only be protected in their occupancy for six months after its passage, after which date the protection extended only sixty days. Many settlers, in hitherto

undisputed possession, knew nothing of these enactments until they received notice that other parties had a clear title to their farms. As if this was not enough, a special bill was passed legalizing all applications for State lands, even when the affidavits by which they were supported did not conform to the law, either in form or substance.

The best part of the agricultural lands of the State were sold before there was any demand for them for agricultural purposes. More than 750,000 acres of eastern agricultural college scrip was located in California. The speculator had only to go east, buy up this scrip with greenbacks when greenbacks were low, locate the scrip under the most favorable conditions to himself in order to become a landlord. One speculator thus obtained 350,000 acres.

These are some of the ways in which the beneficent intentions of the general government have been defeated in a great measure. The Agricultural College Grant, which was made at a comparatively recent date, has never been popular with the people, because the lands being located in the newer States, the inhabitants naturally felt that the grant was a tax put upon settlers to support the colleges of the older and richer ones.

This grant was given solely "for the benefit of agriculture and the mechanic arts," not to educate farmers' or mechanics' sons who do not necessarily, or as a rule, follow the calling of their parents.

Wherever an institution has been founded upon or supported by this grant, whose leading object has been to impart a liberal and practical education to those desiring to qualify themselves for the *actual practice of agriculture, the mechanic trades, or industrial arts*, it has conferred a signal benefit upon those pursuits, by sending more than fifty per cent. of its graduates as educated experts into those callings.

Wherever this grant has been handed over to sectarian colleges, or wherever grand university schemes have been fostered by it, the benefits have been partial and inappreciable, the graduates going to swell the already overcrowded professions, the army of speculators and make-shifts, rather than to the farm and the workshop.

The obligation of the State with respect to this grant is precisely the same as in respect to the public schools. The benefits of this munificent donation to the masses of the people should be made to reach the masses by the shortest and most direct route, in special institutions provided for the purpose.*

The Agricultural College scrip of California was located under special privileges, and has been sold for five dollars an acre. The expenses of the management and sale of those lands is defrayed out of the fund, in defiance of Section 3 of the congressional law, which declares that "all expenses incurred in the sales, management, and disbursement of the money received therefrom shall be paid out of the treasury of said States, that the entire proceeds may remain forever undiminished."

Having thus shown what were the original national endowments for public education, and indicated the relation of the State as trustee, it is not necessary to elaborate the argument in proof of the proposition that the property of the State should be taxed to provide for the education of the children of the State, irrespective of locality, as a matter of justice. President Bascom says: "It is a painful and

* See Appendix.

irrational limitation of the rights of the State to say that it cannot by taxation take the money of a rich man to educate the son of a poor man, no matter how unwillingly yielded, and put him at the peril of life in the front ranks of those who as a police or military force are to protect the property of that same rich man."

Capital draws capital, the commercial centers are magnets which concentrate the wealth of the population around a few points. The doctrine has been openly advocated that our present State system of taxation for schools is unjust, that the present basis of apportionment should be changed. "Why," it is asked, "should San Francisco pay for the schooling of the cow counties?" Because a State is an organism, and no speedier means could be devised for its destruction than would result from the atrophy of its extremities, by withholding an equal support to all the schools, an equal education to every child. We have been accustomed to speak of the *generosity* of our people in respect to our schools. Conceding this eminent characteristic, I am still of the opinion that every dollar hitherto expended belonged to the children, and that the claims of the future are equally just. A clause embodied in the new Constitution (Section 9, Article IX) applies the principle of *restitution* to the University: "The Legislature shall provide that if, through neglect, misappropriation, or any other contingency, any portion of the funds so set apart shall be diminished or lost, the State shall replace such portion so lost or misappropriated, so that the principal thereof shall be forever undiminished." The same principle should have been applied to the management of the public school funds.

PART II.—RETROSPECTIVE.—1850-1880.

RESUMÉ OF SCHOOL LEGISLATION.

A brief resumé of school legislation in California will illustrate the growth and the fluctuations of public opinion upon the most vital questions of school policy.

LAWS OF EIGHTEEN HUNDRED AND FIFTY-ONE.

The school law of 1851 provided for a State apportionment upon the basis of the number of census children between seven and eighteen years of age, and a district apportionment on the basis of the number of children actually attending a *three* months school.

Also, that religious, charitable, and sectarian schools share equally in this distribution, under the general supervision of the State, through the Superintendent of Public Instruction and local Superintending School Committees.

The latter were elected annually, with power to examine and appoint teachers, to disburse the School Fund, and to report each year to the State Superintendent. High schools were also included in the provisions of this law. The studies of primary, intermediate, and grammar schools were specified. No *County Superintendents* were created.

Condensed from the valuable "History of the Public School System," by John Swett:

LAW OF EIGHTEEN HUNDRED AND FIFTY-TWO.

The first State tax was levied in 1852, of five cents on each one hundred dollars of the taxable property of the State. The school law of that year provided that this fund should be used exclusively for the payment of teachers' salaries, for a *State Board of Education*, consisting of the Governor, Surveyor-General, and Superintendent of Public Instruction. It made County Assessors *ex officio* County Superintendents, created three School Commissioners in each district to serve one year, defined their duties, authorized counties, and also the Common Council of incorporated towns, to raise a school tax not to exceed three cents on a hundred dollars, to provide for teachers' examinations, and gave permission for an annual meeting of teachers at the call of the State Superintendent. It also provided that no school should receive any apportionment of public money unless free "from all denominational or sectarian bias, control or influence whatever." The latter clause of the foregoing was amended the following year so that religious and sectarian schools received a pro rata share of the funds.

LAW OF EIGHTEEN HUNDRED AND FIFTY-THREE-FOUR-FIVE.

Perhaps no feature of the present school system has experienced the vicissitudes of public opinion to an equal degree. At the fifth session of the Legislature—1854—the so-called Ashley Bill, repealing all Acts which permitted sectarian education at the public expense, was hotly debated, and was passed to engrossment only after the strongest opposition. It did not become a law until the next session, May 3d, 1855, since when no sectarian books could be used, or sectarian doctrines taught in the public schools, without involving the forfeiture of the public funds.

LAW OF EIGHTEEN HUNDRED AND FIFTY-SIX.

The more important features of the present school law were ingrafted upon it by the sixth Legislature, viz.: Provision for the election of County Superintendents, also of City Superintendents and Boards of Education, enlargement of the powers of School Trustees, establishment of school districts, limitation of State, county, and city taxation, provision for school libraries. It forbade the payment from the public fund of teachers not duly examined by competent authority.

LAW OF EIGHTEEN HUNDRED AND FIFTY-EIGHT.

The Legislature of 1858 provided that school districts could levy a tax for building school houses or for the support of the schools, provided that a *four* months school had been maintained.

They also took important action in respect to the sale of the school lands and the conversion of the proceeds into bonds.

LAW OF EIGHTEEN HUNDRED AND SIXTY.

A great advance was made in 1860. The Legislature of that year raised the maximum rate of the county school tax from ten to twenty-five cents on a \$100; authorized the State Superintendent to hold a State Teachers' Institute annually, and voted \$3,000 to pay its expenses; it also authorized the State Superintendent to appoint a State Board of Examination, with power to grant teachers' certificates valid for two years; required that the school funds of any one year should be used exclusively for that year; authorized County Superintendents to appoint County Boards of Examination, consisting exclusively of teachers, with powers to grant teachers' certificates valid for one year.

The State Board of Education was authorized to adopt a State series of text-books, and to compel their use in the public schools, under the penalty of a forfeiture of the school moneys. This Act went into effect in 1861.

LAW OF EIGHTEEN HUNDRED AND SIXTY-ONE.

The "Conness Bill" of 1861 was passed, providing for the sale of the 16th and 36th sections of school land, and the payment of their proceeds into the State School Fund.

LAW OF EIGHTEEN HUNDRED AND SIXTY-TWO.

The Act of 1862, establishing a State Normal School in the City of San Francisco, was passed, with an appropriation of \$3,000.

LAWS OF EIGHTEEN HUNDRED AND SIXTY-THREE.

An Act was passed in 1863 requiring the Superintendent to furnish a school register to every school, at the expense of the State.

An Act requiring the State Superintendent to visit schools, to attend County Institutes, to address public assemblies on subjects relating to education, fixing the payment of his actual traveling expenses at \$1,000 per annum.

An Act providing for the annual appropriation of \$150, out of the County General Fund, for the County Teachers' Institute.

An Act changing the term of office of School Trustees from one to three years.

An Act authorizing the State Board of Education to grant educational diplomas valid for six years; State certificates of the first grade valid for four years; and second and third grade certificates valid for two years.

A stringent law for the assessment and collection of district taxes for building purposes, and also for the support of the schools, and for the assessment and collection of rate bills.

An Act requiring all teachers, under penalty of forfeiture of their salaries, to take the oath of allegiance.

LAWS OF EIGHTEEN HUNDRED AND SIXTY-FOUR.

The important legislation of the session of 1864 was the passage of a "supplementary and amendatory bill," prepared by State Superintendent Swett, which contained the following provisions:

Levying an annual State school tax of five cents on each \$100 of taxable property in the State, to be apportioned in the same manner as the interest of the State School Fund.

Requiring each county to levy a minimum county school tax, equal to \$2 for each child between four and eighteen years of age.

Raising the maximum rate of county tax allowed by law from twenty-five cents to thirty cents per \$100.

Making it the imperative duty of Public School Trustees to levy a direct property tax sufficient to maintain a public school five months in each year, whenever the State and county school money shall be insufficient for that purpose.

Authorizing County Superintendents to subscribe for a sufficient number of copies of some State educational journal to furnish each Board of School Trustees in the State with one copy, at an expense not exceeding \$1 a year.

Allowing County Superintendents a sum for postage equal to \$2 for each school district.

Requiring the History of the United States, and physiology and hygiene to be studied in all the schools above the grade of primary.

LAWS OF EIGHTEEN HUNDRED AND SIXTY-FIVE AND SIX.

The revision of the School Law was further perfected by Superintendent Swett in 1865-6, and embraced the following additional provisions:

Organizing a State Board of Education of nine members.

Organizing a Board of State Normal School Trustees of eight members.

Authorizing the State Board of Education to adopt rules and regulations and a course of study for public schools.

Authorizing the State Board to issue life and educational diplomas for teachers.

Authorizing the State Board to issue State certificates on county examinations with a State series of questions.

Authorizing the State Board to recognize the Normal School diplomas of other States.

Establishing City Boards of Examination. •

Requiring all Boards of Examination, whether State, city, or county, to be composed exclusively of professional teachers who are holders of State diplomas, or first grade city or county certificates.

Enlarging the powers and increasing the salaries of County Superintendents; also, securing to them a fund for postage and expressage.

Authorizing them to equalize district boundaries.

The election of School Trustees for three years instead of one.

Limiting the attendance of children under eight years of age to four hours a day, exclusive of intermissions.

Providing separate schools for other than white children.

Reserving ten per cent. of the State school apportionment for school libraries.

Authorizing a State subscription for an educational journal.

For the distribution of the Biennial Report of the State Superintendent among school officers and libraries.

Requiring the State Superintendent to visit schools and lecture at least three months every year, and providing for the payment of his actual traveling expenses.

Establishing County Teachers' Institutes, and providing for the payment of necessary expenses out of the County School Fund.

Funding the debt of the State to the School Fund.

Requiring the District Clerk to furnish the schools with pens, ink, stationery, and incidentals, at the expense of the district.

The establishment of graded schools.

Providing for a State tax of eight cents on each \$100 of taxable property.

Requiring a minimum county school tax of \$3 per census child, and increasing the maximum tax to thirty-five cents on each \$100.

Authorizing and requiring School Trustees to levy a district school tax sufficient to keep a free school five months in a year.

Changing the school year to correspond with the State fiscal year, July 1st—June 30th.

The average length of school time during the year 1867 was 7.2 months. The average salaries of male teachers was \$77 per month; of female teachers, \$64.

LAWS OF EIGHTEEN HUNDRED AND SIXTY-EIGHT AND NINE.

The law requiring teachers to take the oath of allegiance was repealed in 1868-9. An amendment to the law relating to uniformity of text-books was made, to compel San Francisco and other cities to adopt the State series.

A bill was passed to provide for organizing a State University.

LAWS OF EIGHTEEN HUNDRED AND SEVENTY-TWO.

In 1872 the essential features, with amendments and additions to the laws then in force relating to the University of California, the State Normal School and the public schools were incorporated into the *Political Codes*. These have undergone some modifications at each subsequent session of the Legislature, but have not been essentially changed.

The law was changed to except incorporated cities from "State uniformity" in 1872.

LAWS OF EIGHTEEN HUNDRED AND SEVENTY-THREE AND FOUR AND EIGHTEEN HUNDRED AND SEVENTY-FIVE AND SIX.

All the incorporated cities, except San Francisco, were placed under the law of State uniformity of text-books in 1874.

As the State had made ample provision for the education of all her children, it seemed consistent to require their attendance upon school. Accordingly the Legislature of 1873-4 passed an Act to enforce the educational rights of children, which, having never been a popular one with the people, has remained a dead letter upon the statute book. The principle of compulsory education is conceded by every advanced educational nation or state.

By an Act, approved March 12th, 1874, women, twenty-one years of age, who are citizens of the United States and of this State, were made eligible to all educational offices within the State, except those from which they are excluded by the Constitution.

Another important Act was passed March 30th, 1874, "to prevent discrimination against female teachers," which provided that "females employed as teachers in the public schools of this State shall, in all cases, receive the same compensation as is allowed male teachers for like services, when holding the same grade certificates."

State uniformity in text-books is one of the subjects upon which legislation has been exceedingly variable.

In 1872 incorporated towns and cities were excepted from the action of the law of 1861, compelling uniformity under penalty of the forfeiture of school moneys.

In 1874 all incorporated cities, *except San Francisco*, were placed under the law; in 1876, early in the session, a bill was passed taking the power of changing text-books from the State Board of Education, a majority of whom were in favor of a change. This law has remained in force until the present time.

A school system cannot be manufactured—unless it is a growth, an organism, in which every part has fitted itself to a felt want of the community, it is not worthy of the name.

Smatterers in education, demagogues in politics, may combine to destroy what the united labors of a generation have been carefully building.

Our school system is such a growth, its imperfections can be remedied, its direction changed, as the people become more intelligent, more thoughtful, and patriotic. Whoever would seek to amend or improve upon it, needs first of all to understand *what* has been done, and why; and above all, to remember "that the success of the public schools depends more upon supervision than upon any other one agency; that this is indeed that indispensable one without which all others have failed. Legislation may provide bountifully for the education of teachers; it may prescribe high standards of qualification; it may make stringent and wise regulations in regard to the duties of all connected with the administration of the system; but parsimony will evade, ignorance maladminister, or apathy render inefficient the best school laws, unless their execution is watched over and enforced by intelligent, active, and *independent* supervision." (Report of Hon. H. S. Randall, Superintendent of the State of New York.)

PRESENT STATUS OF THE SCHOOL SYSTEM.

The existing school laws and regulations relating to public schools are found in the publications of this department for 1878.

The State organization now consists of—

First—A Superintendent of Public Instruction.

Second—A State Board of Education.

Third—A State Board of Examination.

Fourth—County Superintendents and County Boards of Examination.

Fifth—City Superintendents, City Boards of Education, and City Boards of Examination.

Sixth—School District Trustees.

Under the existing laws the school revenues are provided by a *county school tax*, the minimum of which shall not be less than three dollars for each census child, or the maximum rate greater than fifty cents on each \$100 of taxable property. This is paid into the county treasury.

A *State school tax* of (1879) twenty-six cents on each \$100 of the taxable property in the State.

THE APPORTIONMENT OF PUBLIC SCHOOL MONIES.

The *State School Funds* consist mainly of the State school tax, and the income derived from the State school lands. These funds are apportioned by the Superintendent of Public Instruction to each county in proportion to the number of census children.

The apportionments go into the county treasuries.

The School Superintendents of the several counties apportion the State and County School Funds to the several school districts, as follows:

Five hundred dollars to each district having one hundred census children, or fraction thereof of not less than fifteen.

Three hundred dollars to each district having less than fifteen and not less than ten census children.

Ten per cent. of the State School Funds for school district libraries

and apparatus, or in cities not divided into districts, fifty dollars for every five hundred census children.

All surplus moneys are apportioned to districts having not less than fifty census children, in proportion to the number of census children. Each district draws its apportionment from the county treasury on the order of the Trustees and the warrants of the Superintendent.

NEW CONSTITUTION.

The new Constitution, adopted in Convention, at Sacramento, March 3d, 1879, and ratified by a vote of the people on Wednesday, May 7th, 1879, contains the following provisions:

ARTICLE IX—EDUCATION.

SECTION 1. A general diffusion of knowledge and intelligence being essential to the preservation of the rights and liberties of the people, the Legislature shall encourage, by all suitable means, the promotion of intellectual, scientific, moral, and agricultural improvement.

SEC. 2. A Superintendent of Public Instruction shall, at each gubernatorial election after the adoption of this Constitution, be elected by the qualified electors of the State. He shall receive a salary equal to that of the Secretary of State, and shall enter upon the duties of his office on the first Monday after the first day of January next succeeding his election.

SEC. 3. A Superintendent of Schools for each county shall be elected by the qualified electors thereof at each gubernatorial election; *provided*, that the Legislature may authorize two or more counties to unite and elect one Superintendent for the counties so uniting.

SEC. 4. The proceeds of all lands that have been or may be granted by the United States to this State for the support of common schools which may be, or may have been, sold or disposed of, and the 500,000 acres of land granted to the new States under an Act of Congress distributing the proceeds of the public lands among the several States of the Union, approved A. D. 1841, and all estates of deceased persons who may have died without leaving a will or heir, and also such per cent. as may be granted, or may have been granted, by Congress on the sale of lands in this State, shall be and remain a perpetual fund, the interest of which, together with all the rents of the unsold lands, and such other means as the Legislature may provide, shall be inviolably appropriated to the support of common schools throughout the State.

SEC. 5. The Legislature shall provide for a system of common schools by which a free school shall be kept up and supported in each district at least six months in every year, after the first year in which a school has been established.

SEC. 6. The public school system shall include primary and grammar schools, and such high schools, evening schools, normal schools, and technical schools as may be established by the Legislature, or by municipal or district authority; but the entire revenue derived from the State School Fund, and the State school tax, shall be applied exclusively to the support of primary and grammar schools.

SEC. 7. The local Boards of Education, and the Boards of Supervisors, and County Superintendents of the several counties which may not have County Boards of Education, shall adopt a series of text-books for the use of the common schools within their respective jurisdictions; the text-books so adopted shall continue in use for not less than four years; they shall also have control of the examination of teachers, and the granting of teachers' certificates, within their several jurisdictions.

SEC. 8. No public money shall ever be appropriated for the support of any sectarian or denominational school, or any school not under the exclusive control of the officers of the public schools; nor shall any sectarian or denominational doctrine be taught, or instruction thereon be permitted, directly or indirectly, in any of the common schools of this State.

SEC. 9. The University of California shall constitute a public trust, and its organization and government shall be perpetually continued in the form and character prescribed by the organic Act creating the same, passed March 23d, 1868 (and the several Acts amendatory thereof), subject only to such legislative control as may be necessary to insure compliance with the terms of its endowments, and the proper investment and security of its funds. It shall be entirely independent of all political or sectarian influence, and kept free therefrom in the appointment of its Regents, and in the administration of its affairs; *provided*, that all the moneys derived from the sale of the public lands donated to this State by Act of Congress, approved July 2d, 1862 (and the several Acts amendatory thereof), shall be invested as provided by said Acts of Congress, and the interest of said moneys shall be inviolably appropriated to the endowment, support, and maintenance of at least one College of Agriculture, where the leading objects shall be (without excluding other scientific and classical studies, and including military tactics) to teach such branches of learning as are related to scientific and practical agriculture and the mechanic arts, in accordance with the requirements and conditions of said Acts of Congress; and the Legislature shall provide that if, through neglect, misappropriation, or any other contingency, any portion of the funds so set apart shall be diminished or lost, the State shall replace such

portion so lost or misappropriated, so that the principal thereof shall remain forever undiminished. No person shall be debarred admission to any of the collegiate departments of the University on account of sex.

Under Section 7, Article IX, we find that the essential features of a *State*, as distinguished from any other system for the maintenance of public schools, have been abandoned, and the most important element of State control, viz., the determination of the qualification of teachers and selection of text-books, is now relegated to local municipal boards, city and county.

We have thus gone back twenty years, and, unless the wisdom of the Legislature should prevent, may experience all the evils which result from the lack of unity in plan, in standards, and in control.

STATE SUPERINTENDENTS AND THEIR WORK.

STATE SUPERINTENDENTS.

John G. Marvin.....	1851-1854.
Paul K. Hubbs.....	1854-1857.
Andrew J. Moulder.....	1857-1863.
John Swett.....	1863-1868.
Rev. O. P. Fitzgerald.....	1868-1872.
Henry N. Bolander.....	1872-1876.
Ezra S. Carr.....	1876-1880.

The review of what has been accomplished during the past thirty years would be incomplete without a reference to the labors of the pioneer Superintendents, who have been, without exception, worthy representatives of the progressive educational spirit. The meager reports of the first two administrations furnish little material for the historian. In those of Mr. Moulder we find evidences of ability to command as well as to execute the popular will. In his first report he said: "We have no such thing as public schools," and in defining such to be "schools where all the children of the State may be educated free of expense," he outlined a scheme of public education, ending in a University, which "should turn out practical and scientific agriculturists, engineers, surveyors, miners, smelters, assayers, chemists, architects, builders, *and last, but not least, school teachers.* We want no pale and sickly scholars, profound in the knowledge of the dead and other languages. We need energetic citizens, skilled in the arts of the living, and capable of instructing their less favored fellows in the pursuits that contribute to the material prosperity of the State. For what useful occupation are the graduates of most of our old colleges fit? Many of them are bright scholars, but when, after years of toil, they have received their diploma, their education for practical life has just commenced. They have still to study for a profession—are still dependent upon their parents."

He strongly urged that in the University such professorships only should be established at first as would tend to direct the energies of the young towards leading industries.

His next report was even more stirring and suggestive. "Twenty thousand seven hundred and eight children have not been inside a public school-house, and 29,347 have in effect received no instruction

during this year," he said. "If this state of things is very good for California, and we do not take instant and effective means to remedy it, these 29,347 neglected children will grow up into 29,347 benighted men and women; a number nearly sufficient, at ordinary times, to control the vote of this State, and, in consequence, to shape its legislation and its destiny." "Damning as the record is, it is yet lamentably true, that during the last five years the State of California has paid \$751,193 80 for the support of criminals, and but \$284,183 69 for the education of the young. In other words, she has paid nearly three times as much for the support of an average of four hundred criminals as for the training and culture of 30,000 children. To make the point more forcible, the figures show that she has expended \$1,885 on every criminal and \$9 on every child."

These stirring appeals to the pride and the patriotism of our citizens were not without marked results. His protest against cheap teachers produced changes which soon drove educational quacks out of the profession, and thereby prevented the waste of the meager funds then at command.

In his twelfth annual report, Mr. Moulder said: "The amount contributed by the State to the cause of education is wretchedly insufficient. It is a pittance almost beneath contempt—*\$1 40 per annum for the education of each schoolable child*. With all the aid from local taxes, rate bills, and private subscription, the average wages of teachers is \$66 72 per month. A first-class bootblack obtains almost as much. I am almost disposed to believe that no teacher at all is better than an ignorant or an unlettered one; but how can we expect to secure the services of highly educated and accomplished teachers for \$66 72 per month?" It should be remembered that those were flush times in California.

The State Normal School and the University are equally indebted to the broad views and fearless advocacy of Superintendent Moulder.

His administration and that of his successor, Mr. Swett, was the formative educational period of California, most fortunate in its selection of officers who were able to bring zeal, professional knowledge, wide information respecting educational experience elsewhere, and statesmanship into their work. Both served two terms, and thus, from 1857-1868, the gradual improvement of our school system was carried forward without a break until a superior system of free schools, supported by taxation, became an accomplished fact.

We have seen from Mr. Moulder's report what was the standard of competency and compensation of teachers at the beginning of this decade. It was no trifling task to revolutionize our school system during a period of civil war, and place it on a level with the richest and most progressive States of the Union. It was still more difficult to avoid mistakes which time and usage had made respectable elsewhere, to drag teachers out of the ruts of precedent, and emancipate them in spite of themselves. Mr. Swett, a professional teacher, who sought the office of Superintendent for "the purpose of raising the standard of professional teaching, and organizing a system of *free schools*," having accomplished that work, returned to the school-room, where he still remains, a leader among the veteran educators of the State.

Competent educators have frequently expressed the opinion that California has had, on the whole, one of the best organized school systems, while in many points its superiority to all others is conceded.

Ours is the only State in the Union where teachers have gained a legal right to be examined exclusively by members of their own profession, where the lawyer or the blacksmith is not allowed to determine their professional qualifications, and ours is the only State which recognizes the State Normal School Diploma or the life certificates of other States as entitling the holder to the same legal immunities as are enjoyed by the graduates and holders of our own.

Mr. Swett was not less emphatic than Mr. Moulder had been upon the subject of teachers' salaries, which had then reached, for male teachers, an average of \$554, and of female teachers, \$460 a year. "No occupation is more laborious, none wears out the muscle and brain faster than that of the teacher. The brain labor of the skillful teacher ought to be as well paid as the brain labor of the lawyer, the physician, the clergyman, or the editor. He ought to dress as well, to live as well. His profession in time and money ought to cost him as much as other professions. He should be paid enough to support a family, to supply himself with periodical literature, to move in the intelligent circles of society with other educated men. Teachers well paid can devote all their time and energy to the schools. They are not greater philanthropists than other men. None of them teach from a pure love of teaching. They ought not to be expected to break mental bread for the children of others and feed their own with stones. It is the teachers who give character and efficiency to the schools. The State may legislate, the people may vote taxes and build school houses, but the teachers build schools and mold character, and act on mind. High salaries will attract talent and skill, and hold them both in the schools. Low wages will fill the schools with bunglers, and waste the public money. If the people of California desire well to lay the foundation of the State for all future time, they must employ skilled master masons to hew the corner-stones."

The administration of Superintendent Fitzgerald was marked by no important changes in the school law. He reported "perfect harmony" in the administration of school affairs throughout the State, and favored the increase of the State school tax to ten cents on each \$100. A disposition having already manifested itself to change the laws giving localities the right to expend their proportion of taxes, Superintendent Fitzgerald said: "There is a fallacy in the assumption that the benefits of education are confined to the particular individuals or localities directly affected by the expenditure of the proceeds of local taxation. The dollar contributed by San Francisco, expended judiciously in Plumas County for education, is no less a benefit to the former than to the latter. The prevalence of ignorance and vice in any neglected locality cannot be merely local evils. Justice and sound policy require that the poorest barefoot boy of the humblest citizen in the poorest district of the most impoverished county should have as abundant facilities for a common school education as the son of the richest citizen of the most opulent city of the State." He declared our system, in these respects, a partial failure, and that much remained to be done.

Superintendent Bolander, while moving on in the line marked out by his predecessors, pronounced himself strongly in favor of enforcing the compulsory education law, and brought some of the principles of social science before the people with great clearness and force. He quoted from Dr. Lyman Beecher that "illiteracy is incipient

crime," demonstrated the direct relation between illiteracy and pauperism, between pauperism and crime, between ignorance and crime. He thought the "fearful increase of hoodlumism in our cities," the rapid increase of non-producers, offered conclusive proof that the law of compulsory education should be supplemented by a law requiring the State to establish and maintain labor schools, schoolships, industrial and technical schools. He said, in his first biennial report, "the times demand not only that children be educated in the common English branches, but also that children be educated how to work."

In 1869, the State Board of Education made a sweeping change in the text-books used in the public schools.

During Mr. Bolander's administration the war between rival publishing houses for the adoption of text-books was carried on with a pertinacity and vigor hitherto unequalled. State uniformity had made the prize of State patronage for a term of four years well worth an outlay of time and money. The rivalry between Eastern houses employing a large amount of capital had brought the text-book question before the people in many ways, and greatly exaggerated its importance. The number of books in use had been unnecessarily increased, to the injury of both parents and pupils. An enterprising house in San Francisco having published a series of readers, at least equal in merit to those in use, many teachers and patrons favored their adoption at the expiration of the contract made by the State with the publishers of the McGuffey series. A majority of the State Board also favored this change and adopted the Bancroft series; but on account of an informality in the proceedings, their action was declared illegal. At the opening of the legislative session of 1875-6, a law, supposed to be temporary in its intention and effects, was passed, which is in force at the present time, forbidding a change of text-books.

Mr. Bolander condemned the use of text-books on general principles, and in his official reports advocated the disuse of the spelling-book in schools. Many of his recommendations, which failed to meet public approval at the time, have in effect been carried out in other States with great advantage to the schools, such as a plan for the establishment of Normal Institutes, of Chairs of Pedagogy or Didactics in the State Universities, etc. His last biennial report, of which a large edition was published, contained a collection of valuable papers upon education, and is frequently called for by school officers of other States.

We have thus sketched the *growth* of our school system, to which each year has given additional strength and symmetry. Its executive officers have been chosen from different political parties, and have represented differing religious beliefs and proclivities, but with remarkable unanimity they have labored to make a *free*, unsectarian education the first and paramount interest of the people.

THE STATE UNIVERSITY.

The attention of the people of the State was early directed toward the establishment of a central institution for higher education, which should obviate the necessity of sending our youth across the continent for their classical and professional training. The Constitution recognized the obligation to apply the proceeds of the Congressional land grant for seminaries of learning to that purpose. The Legislature added the proceeds of the grant of ten sections for public buildings.

In 1853, Henry Durant, a graduate and ex-tutor of Yale College, and for many years Principal of Dummer Academy, Massachusetts, arrived in California and opened a "college school" in Oakland. This school grew up into the College of California, which, during its brief existence, had no connection with the State educational system. No college or seminary of learning had been organized, under the provisions of the Constitution, until 1869.

By Act of Congress, July 2d, 1862, an Act, commonly called the Agricultural College Act, gave large grants of public lands to the several States "for the benefit of agriculture and the mechanic arts." The share of California was 150,000 acres. Unless the States complied with the terms of the Act, by the establishment of at least one college for the liberal and practical training of students in agriculture and the mechanic arts within five years, the grant was forfeited. The grant was accepted by the Legislature of California, March 31st, 1864, and an Act passed to establish such college March 31st, 1865. The lands were unsold, and the time stipulated by Congress for these colleges to go into operation was about to expire, when the College of California offered its site at Berkeley, its property, buildings, etc., to the State for the proposed institution, provided it should be elevated to the rank of a university. Considerations of economy and efficiency prompted the acceptance of this offer, and the *University of California* was formally inaugurated in the City of Oakland, in the buildings previously occupied by the college. Thus, along the line of what is termed a liberal education, great benefits were secured, an institution founded that was "forever free," and open alike to both sexes. Mr. Durant became its first President.

By an Act of the Legislature, approved April 2d, 1870, so much of the proceeds of the sale of the marsh and tide lands were invested in bonds as should yield an annual income to the University of \$50,000.

If, as the reports of successive legislative committees and the frequent and urgent memorials of influential associations of farmers and mechanics would indicate, agriculture and the mechanic arts have derived only indirect benefits from the grant for agricultural colleges, it must be remembered that these complaints are not made in California alone, but in nearly every State which legalized the union with existing colleges without guaranties, or sufficient protection of the rights of the younger and weaker party.

The University has reached the ideal standard of its original projectors, with full departments of Law and Medicine; courses or Colleges of Agriculture, Mechanics, and Engineering, and affiliated Colleges of Dentistry and Pharmacy. The foundation of an Art College has been laid in the gift of an art collection, with \$25,000 in

money, to which the State has added an equal sum. The munificent example of Dr. Toland, in donating the valuable property of the Toland Medical College entire to the University, has borne fruit, in the ample endowment by Judge Hastings of the Law College, and of the Dental College by Dr. Cogswell, and in the equally generous gift of Mr. H. D. Bacon, for the promotion of the fine arts.

The Faculties of the University are of unexceptional ability in all the departments, and include the names of several gentlemen who brought continental reputations as teachers and scientists to this new field.

THE STATE NORMAL SCHOOL,

First established in San Francisco in 1861, by Act of the Legislature, and with only the meager appropriation of \$3,000, opened July 21st, 1862, with 34 pupils, Mr. Ahira Holmes, Principal. A Training School was taught by Miss Helen M. Clark and Miss Kate Sullivan.

The number in attendance gradually increased, reaching 86 in 1865; in 1875, 350 pupils were enrolled and instructed by a corps of twelve professors and teachers. The site of the Normal School was changed from San Francisco to San José, where, in 1872, a magnificent building was erected for its accommodation at a cost of \$250,000. The Legislature has made further liberal provisions for the improvement of its building and grounds.

The Normal School has an excellent library, and a rapidly increasing natural history collection.

Five hundred and fifty teachers have graduated at this school, and it is believed a larger proportion than is usual are in the actual practice of the profession.

The Faculty number nineteen—professors and instructors.

The total number of pupils for the year 1879 is 548. The Training School has 113. Instruction is free.

The economy and efficiency with which the Normal School has been managed is worthy of great praise.

The annual appropriation for the last two years has been \$33,300, which covers all expenses.

With the increase of population there will be an increased demand for normal instruction. This should be met, not by establishing other normal schools, but by maintaining annual *Normal Institutes* at different points in the State, and by carrying forward the high school course in towns and cities through another year, especially devoted to didactics. This is already done in the Girls' High School at San Francisco, from which three classes of well trained teachers have been graduated.

The University of California and the California State Normal School make full and complete reports to the Governor. The same is true of the State Asylum for the Deaf, Dumb, and Blind, at Berkeley, which is believed to be unsurpassed in its instruction by any similar institution in the United States.

The several institutions in the State for the care and education of orphans, under private management and receiving aid from the State, make no report to this department, but are, to the best of my knowledge and belief, doing a most praiseworthy work and deserve continued support.

DENOMINATIONAL COLLEGES AND PRIVATE SCHOOLS.

To this *resumé* of our thirty years' work in education, many pages might be added in notices of the work of the various denominational institutions of learning.

Among these, Santa Clara College, founded in 1851, is one of the oldest and most flourishing. It is under the exclusive control of the Jesuit Fathers, and has been officered from the first by gentlemen of distinguished ability in literature and science. Its laboratories and museums are well furnished, its course of study very practical, including telegraphy, photography, and other arts.

St. Ignatius College in San Francisco, incorporated in 1859, numbers a large Faculty, and has been noted for its high standard of scholarship.

The institutions of the Christian Brothers at San Francisco, Sacramento, and other points, deservedly enjoy the confidence of the community.

The Catholic schools maintained by the various Sisterhoods are numerous and useful, and several of them have been the first to combine industrial training with school exercises; while others are introducing the Kindergarten methods into their primary classes.

The Methodist Colleges have done great good in the State, and are planted here upon the broadest and most liberal basis of general usefulness. They are all co-educative. The Pacific Methodist College, at Santa Rosa, organized in 1862, has a department of pedagogics for those who wish to become teachers, and a commercial course designed to prepare for mercantile pursuits. The University of the Pacific, at Santa Clara, is also under the control of the Methodist Episcopal denomination, and has several practical departments, such as banking, telegraphy, music, etc.

The College of St. Augustine, at Benicia (Protestant Episcopal), is under the charge of the Bishop of Northern California, and adds military instruction to its other training.

The Pierce (Christian) College, in Colusa County, and the Hesperian College, at Woodland, are flourishing institutions for both sexes, as is also Washington College, at Washington Corners, Alameda County, an undenominational but professedly religious institution, growing rapidly in numbers and usefulness.

Mills Seminary, at Brooklyn, Alameda County, under a modest title, ranks with the best modern colleges for the higher education of women. Like Vassar or Smith College, at Northampton, it unites the features of home and school life, and, with increasing means, offers enlarged facilities for high scholarship and accomplishments in the practical duties as well as refined pursuits of womanhood. It has twenty teachers. The number of students varies from 250 to 300.

The growth of this school has been almost unprecedented, and since its incorporation, the endowment of special chairs is only required to place it at the head of this class of institutions. The health standard of scholars and graduates has been so high as to disabuse the public mind of prejudice on account of the early breaking down of educated women. The property of the seminary is valued at \$250,000.

There are a large number of secondary institutions of high char-

acter. Among the most celebrated are the Benicia Seminary for young ladies; Santa Barbara College; the Napa Collegiate Institute; Napa Seminary; the California Military Academy; Saint Mathew's Hall, at San Mateo, military also; Madame Zietska's Institute, at San Francisco; Laurel Hall, at San Mateo; Mrs. Posten's Seminary, at Oakland; the Sacramento Female Seminary; the Golden Gate Academy, at Oakland; University Mound College, at San Francisco; and the California College, at Vacaville.

Several schools preparatory to the University of California are supported at Oakland and Berkeley.

A school of fine arts in San Francisco has been well patronized.

And last but by no means least in importance, we have to record the establishment of the Normal Kindergarten School at Berkeley, for the training of primary teachers. This school is under the care of Miss Emma Marwedel, one of the most experienced Kindergarteners of the country. There is also a flourishing Kindergarten in San Francisco, managed by Miss Kate Smith, which serves as a model for many Kindergarten classes connected with private schools.

In conclusion, it is worthy of remark that these private and denominational schools have flourished and increased in efficiency with the improvement of the public schools. The stream cannot rise higher than the fountain. No better use can be made of wealth than the endowment of chairs of science and of art, or of scholarships, in institutions of this kind, where the children of the people may receive higher culture. Let wealth endow them, and prayer sanctify them, and the affections of the people cluster around them in the future as in the past, for they have been the inspirers and conservators of all that is best in the life of the American people.

PART III.—OUTLOOKS.

OUTLOOKS.

The notion that the State should concern itself only with elementary instruction is condemned by the usage of nearly every nation in the world.—*John D. Philbrick, in report upon the Paris Exposition.*

A boy or girl who can draw his acquired *one* qualification for nine-tenths of the occupations into which all labor is divided.—*Mr. John Culyer.*

With the establishment of technical schools the circle of our educational institutions will be made complete, and the obligations of the State to the whole people will be fulfilled.—*Superintendent Appgar, in New Jersey School Report for 1878.*

TECHNICAL AND INDUSTRIAL EDUCATION.

My last biennial report contained a digest of the opinions of the leading educators of the United States upon the grave defects of our public school system, and indicated the direction in which we should seek for a remedy.

That the importance of the more practical education was not overstated, is proved in the continued efforts to reduce the public expenditure for education. Our people are not niggardly; they have poured out vast sums at the call of intellectual trainers and mental culturists; they are ready to double these sums whenever our educational affairs are conducted upon a business basis, and the money value of the schools is demonstrated. The head may be filled with facts and principles, the heart "all right;" yet, if the hand be unskilled, habits of industry unformed, disgrace and failure in the struggle for life is inevitable.

The law of reform and the prevention of error and crime is now based upon an active and cheerful employment of the head and the hands; the same law applied universally in the school and the home would empty our reformatories.

During the present year there has been a general agitation along the whole line on the school question. Last winter was a sort of Black Friday in school matters, for the Legislatures of so many States appeared to take backward steps on questions hitherto considered as settled. When Americans consider the propriety of longer supporting schools at the public expense, alleging that they are not returning full equivalents, it is full time that the matter be considered.

The people who pay for the support of the public schools claim returns in knowledge and in skill that shall serve them in their occupations and handicrafts. This demand, from the very nature of things, has grown emphatic; and as population increases will become positively dominant.

The courses of study, as early established in the schools of the United States, were of the tone and spirit of the European idea, that the masses were to subserve the interests of the learned few. It is claimed for them that they look towards developing man as man, but it can readily be shown that they rather contain the germ of the notion that rank is the natural state of man in his relations to man.

I take it that just here lies the strong force which agitates this whole subject—it is the inevitable struggle between the means for a livelihood on the one hand, and the aristocracy of intellect on the other.

If history can throw any light upon this struggle, it points to these results, either the masses will abandon the contest and sink into an unlettered peasantry, or else they will withhold support if not allowed such studies as prepare the youth for the material living, for the offices of man in society.—*Lecture of Principal James H. Hoose, of the Courtland (N. Y.) Normal School, before the University Convocation.*

Section 6th of the new Constitution includes such high schools, evening schools, normal schools, and *technical* schools as may be established by the Legislature, or by municipal or district authority. The scope and benefits of the three first named classes are generally understood; the latter require some further illustration. *Technical* education is the present battle ground of educational conservatism and progress. Guarding the proceeds of State School Fund and the State school tax against the danger of losses through ill-advised experiments, the framers of the Constitution have wisely left the provision and maintenance of special schools to the people.

The great mass of our teachers are unprepared to welcome changes which involve a departure from the methods now in vogue, which will depreciate the text-book and the examination cram—in short, which will take away all the artificial supports upon which teachers lean. But the law of demand and supply may be trusted to correct this state of things. The demand is already heard from many quarters.

A special committee of grangers, university professors, and school officers reported to an educational convention in San Francisco, May 8th, 1877:

We should have teachers especially prepared to give some practical knowledge of nature and its laws; of moral truths and the business affairs of life. We would recommend that fuller instruction than at present be given in the metric system, and in industrial drawing. Each school should be more fully furnished with modern appliances for object teaching, and the "Kindergarten" methods should be engrafted as much as possible upon the entire educational system. The improvement of school grounds and gardens cannot be too strongly urged.

We should have teachers especially prepared with reference to the objects had in view, *imbued with respect for industrial callings and with interest in rural affairs.* Teachers for the city schools should, by the corresponding preparation, be fitted to instruct their pupils in such manner as to prepare them for usefulness in the kinds of labor there in operation.

Normal teaching should be so directed as to fit the teacher to throw light upon the philosophy of common things, and a greater flexibility than now exists should appear in the standard to which students are expected to attain. We recommend such an increase of facilities as may be feasible for the obtaining by the students of a practical knowledge of horticulture, and the introduction of such industrial studies as will prepare them to give the improved instruction demanded when they shall have become teachers of the public schools.

Some of our leading teachers have "put themselves upon the record" as ready to supply the requisites of this new departure. Three school newspapers are printed and published by the pupils of the public schools under the direction of their teachers. Several schools have gardens and grounds which reflect great credit upon the management. One school in Sonoma County made a praiseworthy exhibit of the results of lessons in needle-work at the last Institute. More important still are the efforts of teachers who, like Mr. Oliver, seek to make the subject of education by work thoroughly understood by the people.

At a meeting of State and other School Superintendents, held at Washington, in February last, this subject received the most earnest attention. The following resolution was unanimously adopted:

WHEREAS, This Convention of State and City Superintendents of Schools recognizes the necessity of industrial education in the public schools of America; and whereas, if a part of the time now given to writing in our day schools were devoted to drawing, the writing would be better and the power of drawing be a clear gain; therefore,

Resolved, That industrial drawing, consisting of geometrical drawing, free hand drawing, and elementary design, being now regarded as the common basis of technical education, should be taught in the public day schools as an elementary part of all general education; and that industrial drawing, modeling, and applied design for trades and manufactures should be taught to persons of both sexes in free evening classes, for those who are not in attendance upon the day schools.

In an address before the convention, Professor Walter Smith remarked, concerning the proposal to establish a national school of industrial arts:

It may be necessary for the protection of this nation that the sword be kept bright at West Point, but it would conduce as much to its greatness and its glory if the ploughshare were kept bright at Washington. In the conflict that is imminent between aggregated capital on the one hand and ignorant, unskilled labor on the other, lurks the greatest danger to our whole social and political organism. It is the province of public education to mitigate, if not entirely to remove, these dangers. In view, therefore, of the vast public expenditure annually made for public education, I warn you against ignoring the interests of the industrial classes. The public schools should be to the State what embankments are to the Dutch, or what its fleet is to the English people.

The most important utterance yet made in this country on the subject of technical education is that made by the Boston School Committee, in their last report:

The question of teaching trades in our schools is one of vital importance. If New England would maintain her place as the great industrial center of the country, she must become to the United States what France is to the rest of Europe, the first in taste, the first in design, the first in skilled workmanship. She must accustom her children from early youth to the use of tools, and give them a thorough training in the mechanic arts.

SEWING IN SCHOOLS.

In Europe needle-work is as universally taught in schools for girls as reading and writing. It is taught in the public schools of Boston, where every girl now receives three years' instruction in the various kinds of sewing, and is made capable of becoming an expert seamstress. The Boston school report enumerates over 20,000 garments of all kinds made in the sewing classes, besides a great quantity of plainer work, such as the making up of table and bed linen, towels, and piece work. The committee say: "The benefits resulting from such instruction are too evident to need enumerating; they are seen in the improved appearance of the children's clothing in school, and are felt and appreciated in thousands of homes."

EQUALITY OF EDUCATION.

By an overwhelming, and one might almost say a unanimous vote, the people of California have decided against Chinese immigration. The significance of this expression of public opinion can hardly be estimated in its bearings upon the educational questions before us. Something more than a vote is needed to place the leading industries of this great State in a position to defy all rivalry and competition, and though the popular will may place the laboring man in the seat of honor, he must be kept there by an equality of education. The history of education shows that it has hitherto been *partial*. In earlier times it was partial as to *kind*—in Greece and Rome it made man a splendid animal; when the object was changed, and the direction turned exclusively to soul-saving, it made man superstitious and servile, and served to maintain spiritual and political despotisms. For a long period it was partial as to numbers. Everywhere one sees the functions of government discharged by the so-called educated classes, who, as a general thing, legislate in the interests of the few, not of the many. The reason why this is true is found in the fact that our over-estimated universal education is still *partial as to its effects*, that

the plan of its development leads up to the college, the university, the professions, and not to the farm, the shop, and manufactory.

The work of the State in education may be divided into three sections. The first is elementary and general (and should be universal and free), making every child familiar with reading, writing, drawing or picture writing, with elementary arithmetic and natural history, and with the geography and history of his own State and country. In the second stage, separation and specialization should begin, which will necessarily grow and perfect itself with the growth of culture and the more perfect organization of the forces of civilization. We now specialize only in regard to classes of unfortunates, the deaf, dumb, blind, etc.; by and by we can specialize as to uses, and make our country schools more preparatory to agriculture, horticulture, and the like; while our city schools, by vacation classes, half-time schools, and other agencies, at first, and afterwards by special schools, render the same service to the mechanic and manufacturing arts. The certainties of science are swiftly taking the place of the haphazard pursuit of those arts, and a great part of secondary instruction should be in the simpler applications of scientific principles. The third stage is the field of the technical schools, the professional college, and State University.

If the people through their representatives vote appropriations for the support of universities which train their students for the professions, law and medicine, engineering and the like, there is neither reason nor justice in withholding special appropriations for the far larger class who must subsist by manual rather than mental labor. The percentages of the industrial distribution of the population of California show that out of every 100 men one man is a teacher, one-half a man is a doctor, less than half a man a lawyer, less than a quarter of a man a minister, while twenty men are engaged in agriculture, thirty-four in mechanics and mining, fourteen in trade and transportation, and twenty-nine in personal service.

It surely requires no argument to prove that the house-mother, whose work is never done, is of all beings an industrialist; that the laborer's wife equally with the laborer needs the training which will enable her to turn toil into thrift. Or that the industrial training of our girls, diversity of occupation for them, and a healthy activity of the powers of mind and body, is the only thing which can save the American people from deterioration.

TECHNICAL SCHOOLS.

The works upon technical schools are numerous, but are rarely to be found in our libraries or book stores. I append a list of the most important, and in answer to many inquiries concerning the scope of these schools, have condensed the following pages from recent reports.

A technical school is one in which the applications of science to the industrial arts are taught. It may be of any grade, from the primary upward. A skillful teacher will be able to introduce much technical instruction into an ordinary school, as is the practice in many parts of Europe.

Technical schools may be broadly classified into agricultural and mechanical. In some schools, both in Europe and America, the classification is into departments only, as in the Kansas Agricultural

College, where students of both sexes are qualified for actual practice in agriculture, the mechanic arts, and household economy.

So, under one government or control, say that a city or a Board of Trustees there may be primary, secondary, and higher schools of trades or of the mechanic arts. Again, common sense will dictate that in the establishment of these schools, whether in the cities or in the country, prominence shall be given to such arts as employ the largest proportion of the people.

This principle has been the vital source of the immense industrial superiority of the French nation. Thus Lyons has its renowned school of arts, which apply to the silk manufacture; Havre, its school of six hundred apprentices in iron and wood work; Limoges, one for ceramic arts; Avignon, its school for architects, etc.

These schools are not always *free*. Begun upon liberal appropriations of the various governments, large contributions are made to their support by the industries most directly benefited.

It is especially desirable that efforts to establish technical schools should be made with caution by those fully imbued with the spirit of industrial reform, and who will bring to the work some adequate understanding of difficulties to be encountered as well as ends to be secured. The record of a safe and highly successful experiment is presented here, from the Massachusetts Educational Report of 1878.

In 1877-8 an experiment was made in Boston, under the auspices of the Industrial Education Society, "to give boys that intimacy with tools and that encouragement to the inborn inclination to handicraft, and that guidance in its use, for want of which so many young men now drift into overcrowded and uncongenial occupations, or lapse into idleness or vice." It was successful. There were more applications than the school could receive. The city gave the use of one of its ward-rooms to this "whittling school;" three gentlemen, one a photographer, two of them practical wood carvers, gratuitously gave their services, on Tuesday and Friday evenings of each week, as superintendents and directors of the work.

Outfit: Thirty-two firm work benches for thirty-two boys, giving to each a space for his work four feet in length and two and a half in width. Each bench had a vise with common wooden jaws and an iron screw; a drawer with lock and key, in which the tools were kept, and a gas burner, with a movable arm. Each boy was provided with a large work-apron of cotton drilling. All the benches, tools, and aprons were numbered, and each boy made accountable for their care and keeping.

Bench regulations, which were pasted on each bench:

1. Be at bench at seven o'clock, according to your number.
2. Do not leave the bench without permission.
3. Give *all your attention* to your own work.
4. Make no unnecessary noise, such as whistling, etc.
5. Keep your bench neat, and do not deface it in any way.
6. After work place all your tools and other equipments in your drawer, according to your number, and return the key to the teacher.
7. Every boy will be held accountable for the tools placed at his bench for his use.

The object of this school was not to make carpenters, but to give boys a familiar acquaintance with certain manipulations which would be equally useful in many different trades. *Instruction, not construction*, was the purpose of the school.

The experiment satisfied the association and all persons interested

that through the adoption of the Russian system manual education may be made an efficient part of public instruction. The essential part of that system is that the *students are taught in classes*, rendering it unnecessary to give any individual instruction, except in rare cases.

Four specialists, employed by the Boston School Association, have prepared a text which precisely sets forth the successive steps in a series of primary lessons in the use of wood-working hand tools. They contain exactly the information required in order that these arts may be brought as completely within reach of the ordinary educational methods as reading or writing.

Eleven lessons, of two hours each, embrace the following topics:

1. Use of the cross-cut saw.
2. Hammer; striking square blows.
3. Splitting saw; sawing to line.
4. Jack-plane; smoothing rough surfaces.
5. Hammer; driving nails vertically.
6. Splitting saw; sawing at exact angles to upper surface.
7. Jack-plane; setting the plane iron.
8. Hammer; driving nails horizontally.
9. Bit and brace; boring in exact positions.
10. Mallet and chisel; mortising.
11. Jack-plane; producing surfaces which intersect at exact angles.

Auxiliary exercises, in laying out the work by measuring and lining, are incidental to all the lessons.

The first lesson is given in full, as an illustration of the character of the text:

LESSONS IN SAWING TO LINE.

Cross-cutting on trestles; auxiliary exercises in measuring and in lining with try-square.

Time—Two hours will be devoted to this lesson.

Materials—Clear white pine for the first hour, white wood for the second hour; one-half inch thick, eight inches wide, four feet long, planed on one face and on the edges.

FIRST STAGE—MEASURING.

Tools, etc.—Rule, two feet long, four folds; pencil, knife, trestles.

Description of trestles—The trestles are of pine, thirty inches long, eighteen inches high, and have four legs, which spread twelve inches at the base.

Forms to be produced—A series of thirty-six marks or dots, one inch apart, commencing at the right hand end.

Placing trestles—Place the trestles at right angles to the direction of the length of the bench, at a little less distance apart than the length of the board opposite the middle of the bench, and with a space between the trestles and front of the bench of about eighteen inches.

Placing board—Rest the board on the trestles with its length in the same direction as the bench, and just beyond those legs of the trestles which are nearest the bench. The framing edge is placed farthest from the bench. Mark it with a cross.

Note—The tried or framing edge, which is the edge to be worked from, is to be selected by the pupil with reference to the straightness and quality of the piece.

Attitude—Stand squarely on both feet at one side of the board, facing it at right angles to its length at the end nearest the vise, and with the back to the bench. Have the left foot a little advanced, so that the body may be thrown forward and backward with perfect freedom and ease. Keep the back straight, and bend at the hips.

Note—An important purpose of this lesson is to enable the pupil to acquire an easy and correct movement. He should watch the others, and imitate the best.

Retaining work—The weight of the work will keep it in place.

Holding rule—In the attitude directed open the rule to its full length.

Placing the rule—Place the graduated edge of the rule upon the framing edge of the board, and its end even with that end of the board which is nearest the vise. Have it lie parallel to the framing edge, and about half an inch from it. Hold it in this position with the left hand until twenty-four marks have been made, then move it to the left one foot, and retain it in that position until the thirty-six marks required have all been made.

Marking—With the pencil in the right hand mark the points upon the board (a dot is enough) opposite the inch divisions on the rule. Then remove the rule from the work, fold it up, and lay it upon the bench.

NOTE—All marking during the first hour is to be executed with the pencil. All marking during the second hour is to be executed with the knife.

SECOND STAGE.

Lining with try-square, tools, etc.—Try-square, marking instruments (pencil, knife), trestles.

Description of tools—The try-square has two parts, viz., head and tongue. The head is made of wood faced with brass. The tongue is of steel, and fixed at an angle of ninety degrees with the head. Both parts have inside and outside edges.

Forms to be produced—Draw thirty-six lines parallel to each other through the thirty-six marks, and at right angles to the length of the board, by means of the square and marking instrument.

Preparations for work—The preparations for work, placing trestles, placing board, attitude, and retaining work, will be the same as in *measuring*.

Holding square—Grasp the square by the head with the left hand, the palm pressing the outside edge, and the thumb on the inner edge of the blade.

Holding marking instrument—Hold it in the right hand in any convenient manner for use.

Placing square—With the square in the hand as described, place the inner edge of its head firmly against the framing edge of the board, with the outer edge of the tongue against the marking instrument, which is held at one of the points already determined by measurement. Hold the square so that the tongue shall lie flat on the top of the piece and point towards the pupil. The thumb may rest partly upon the inner edge of the square and partly upon the board; this will help the student to feel it if the square slips.

Marking—Hold the marking instrument against the outside edge of the tongue, touching the board at any convenient inclination; draw it steadily across the work once, without changing its inclination.

NOTE.—In this stage, during the first hour, the marking instrument will be the pencil; during the second hour, the knife or the scriber, once marking or lining is usually sufficient, though it is quite customary, when lining with a knife, to repeat the marking. When properly done, *i. e.*, cut deep enough the first time, no repetition is required.

THIRD STAGE.

Cross-cut sawing on trestles, tools, etc. *Cross-cut saw; trestles.* *Description of the saw*—The saw consists of two parts, blade and handle. The edge of the blade on which the teeth are cut is called the front edge or breast; the other, the back. The end of the blade farthest from the handle is called the point; the opposite end, the heel.

Forms to be produced—Thirty-six pieces, one inch wide, of a length equal to the width of the board, and having the lines upon them by which the saw was guided.

Preparations for work—Placing trestles, placing board, and attitude, will be the same as in *measuring*.

Retaining the board while sawing it—With the left hand grasp the framing edge of the board in such a place as will bring the end of the thumb, when extended, even with the line farthest to the right, at the same time pressing down on the board with the palm of the hand to hold it firmly in place on the trestles.

Holding saw—Take the saw by the handle, with the teeth pointing down, with the right hand, inserting the second, third, and fourth fingers through the opening made for that purpose; close the hand, with the forefinger extended along the side of the handle to assist in steadying the saw.

NOTE.—The hand will then assume nearly the position that it has when one is pointing with the forefinger.

Placing the saw—Place the middle of the cutting edge of the saw at the line on the framing edge of the board, the blade resting gently against the thumb of the left hand; hold the saw in a vertical position, when viewed from above, and at any convenient angle with the top of the board, when viewed from the side.

Commencement of sawing; drawing stroke—Without bearing on the saw, draw it several inches towards the shoulder in a straight line; this will have started the cutting, and the saw will now be kept moving sideways by the kerf it has cut.

Pushing stroke—With very light pressure reverse the motion just completed, moving the saw its full length, now back and forth continually, guiding the saw to the line drawn.

Watching the saw—To guide the saw correctly, the eye must watch closely its path, to check its first disposition to depart from the line. It should view the saw from a position vertically above its edge. If viewed from a position considerably to the right or left, the hand is liable to lean from the eye, and thence to incline the saw sideways.

Correction of deviations from the line—The correction of the deviation of the saw from the line is to be made by twisting the blade in the kerf; inasmuch as the back edge of the saw is somewhat thinner than the cutting edge, the blade can thus be twisted in the kerf, and the true line returned to.

Caution—The pupil is cautioned not to press hard upon the saw, for by so doing he will be more liable to deviate from the line, to leave his work less smooth, and to injure the saw.

Finishing—On approaching completion, the position of both the left hand and the body may require changing, as both pieces of the wood are to be kept free from splinters and perfect every way. When the saw is well advanced through the work, place the left knee upon the nearest

edge of the board to hold it against the trestles, partially relieving the left hand from this duty. Move this hand from its original position along the edge, and grasp the board on both sides of the kerf, to support the end projecting beyond the trestle, and also to press the board against the knee; while in this position, the sawing may be completed and the piece removed. It should not be allowed to fall upon the floor.

NOTE—Near the end of the cut, the strokes should be carefully made to avoid splintering. To do this, saw lightly and somewhat quicker.

PERCENTAGE OF MARKS.

1. Sawing to line without removing any of it	45 per cent.
2. Corners not splintered in finishing sawing	25 per cent.
3. Corners not injured in starting sawing	20 per cent.
4. Number of pieces sawn off	10 per cent.

Appended below is an account of a school established in 1869 at Rotterdam, Holland, "for the purpose of training youths by practical and theoretical instruction to become clever artisans."

To take their place in society it is absolutely necessary for artisans to be practically and theoretically formed and fit for their work. Therefore the pupils are developed in both respects. Practice and theory are united, and so everything like cramming is avoided.

The practical instruction, certainly the most important for these pupils, who when leaving the school must be fit for practical life, is given in the afternoon, in special workshops, by clever masters, where the boys are taught for carpenters, smiths, braziers, painters, masons, stone-cutters, cabinet-makers, wood-carvers, modelers, turners, etc. All petty work is entirely excluded; the boys are as much as possible occupied with work of solidity and utility, either for use in the school or for sale to the trade. This instruction is given in such a way that without exaggeration it may be said that the pupil, from the moment of entering the school (in this instance the workshop), enters into real life. In the first place he is made familiar with the tools, and immediately afterwards intrusted with objects which, finished, have a real destination, so that his work is never useless in his own eyes. The ambition and the desire to do right are kept more alive in this way than by working without a well defined aim. Moreover, experience has taught that a promise to be allowed to work at a large and bona fide piece of workmanship excites ambition in the boys.

The workshops are all, as far as possible, up to the standard of the present day, and provided with all necessary tools and conveniences. In the carpenters' shop, where more than 80 pupils are taught together, there are a sufficient number of benches with all further requisites; in the smithies, with 70 boys, are forges, anvils, benches, vises, etc.

Besides the continual enlargements and improvements of the several workshops, required by the increasing number of pupils, constructed by the boys themselves, under the eye of the masters, the carpenters make chests for the use of the school, benches, trestles, ladders and steps, windows, doors, desks, etc. The smiths: big nails, cramps, hooks, hinges, locks, stoves, with appurtenances, screw-nuts, smith's tongs, girders, etc. The braziers: different kitchen utensils, as water-cans, soap-tins, baking-pans, kettles, dust-pans, sprinques, stair-rods and eyes, basins, etc.; furthermore, they are taught stretching, turning, forging, and soldering. The instrument-makers, working in the smithies, are moreover instructed in the cutting of screws and worms, the forging of steel and copper, and the casting of copper objects. The masons make different joints, plain walls, foundations, chimneys, niches, sewers, arches, etc. The stone-cutters, sinkstones, steps, stone thresholds, keystones; besides this, they are taught the hewing of slabs, transposing stones, placing finished pieces of masonry, flooring tiles, and placing plinths. The painters are instructed how to make putty, to grind paint, to stop, to smooth, to rub, to cut, and to set window glass, to write and paint letters, and to imitate wood and marble. In the workshops for cabinet-makers, wood-carvers, and turners, they make benches, lime and screw-tongs, and other tools, drawers, modeled and carved ornaments, etc.

A few hours every morning are devoted to instruction in general branches, a repetition of what the boys have learned in the primary schools, as they have had to pass an easy examination before being admitted. For every class, except the first, it includes reading, writing, and arithmetic, the geography and history of Holland, and grammar. The grammatical instruction for the different classes embrace the parts of speech, exercises in writing, and easy composition without grammatical faults. In the arithmetic classes are taught the percentage, the rule of three, simple and compound progressions, measuring of superficies and bodies, square and cube roots; for the second division, vulgar fractions, examples in vulgar and decimal fractions, measurement of superficies and square roots; for the third division, it only goes to the four fundamental rules in decimal fractions, and the measurement of quadrates and rectangles.

Practical arithmetic proves to be of great use in developing the mental powers of the pupils. It will be superfluous to say that in this branch the examples are always taken from daily practical life.

In the algebra classes the boys are taught the knowledge and application of simple and fractional forms, the greatest common measure, and the smallest common denominator, involution, and evolution; in geometry, the principal theories of lines, angles, triangles, and polygons, and

their applications. In treating mechanical arithmetic, theorems are dealt with respecting the seven simple tools, as levers and balances, pulleys with fixed and loose wheels and tackles, the windlass and capstan, the inclined plane, the screw, the wedge, and the jack.

The instruction in physics comprises the leading properties of bodies, equilibrium, and movement.

In all these branches the teachers bear in mind that the boys are to become artisans, and the examples are therefore taken as much as possible from their future profession.

The singing classes, to which a few hours a week are devoted, give very satisfactory results, and are certainly not without a favorable influence on the pupils.

In model and ornamental drawing the boys begin with copying rectilinear and curved figures, and simple and composed ornaments from models placed at some distance. As soon as they are in this way made familiar with the elements, and can make copies from models, the boys are set to draw figures and plaster ornaments from life.

The same method is followed in the course of rectilinear and architectural drawing. As soon as the boys have obtained some practice by copying mathematical problems and constructions from models, they are set to draw simple constructions from life, wood, iron, or brick-work, viz., window joints, door jams, ravelins, stair cases, simple roof constructions, brace-works, hinges, screws, springs, locks, masonry joints, simple stone-work, profiles of cornices, architraves, panel joints, panels, etc. All these objects are drawn from life or worked out from simple outlines on a given scale.

In the highest classes the boys draw perspectives, projections, and sectional views of objects belonging to their profession of natural size. To give an idea of this system we mention that a frame with sash windows is drawn plain, standing, and in sections, so that the place of the cross-pieces, head-pieces, stone-thresholds, and wainscots may be indicated as clearly as possible. Afterwards the different pieces are drawn in detail, as the joints of the frame, the stiles with the threshold to which they belong, etc., and this is done in such a way that the different parts are shown from every side.

To draw a lock, the pupil proceeds as follows: After having drawn the outside, he removes the plate and draws the inside, locked as well as unlocked. Afterwards every part that offers any peculiarity is treated separately, and from every point of view: the up and the underside of the slide are drawn, and also the tumblers and the spring. Then the lock is again put together by the pupil, so that at the same time he has gained a clear idea of the right place of every part.

From this sketch may be seen that the character of the school is taken into consideration in every subject that is taught, and that the instruction is altogether so arranged as to assist the future requirements of the pupils. For the workman must not only be able to make a good drawing, but he ought to understand what he draws, and also to make a thing belonging to his profession after having seen a good drawing of the same.

The number of masters amounts to 21; a director (Mr. D. de Vries), who is at the same time teacher of construction, projection-drawing, and the knowledge of materials; a sub-director, teaching construction-drawing; a teacher of rectilinear and architectural drawing; two teachers of ornamental and model drawing; a teacher of physics, one of mathematics, one for repetition of general branches, a singing master, four master-carpenters, three smiths (two for bench, and one for forge work), one metal-worker, one stone-cutter, one cabinet-maker, one painter, one modeler and wood-carver, and one wood-turner.

The number of pupils, almost all without exception workmen's children, was at the beginning of the first year, 111; the second, 132; the third, 134; the fourth, 156; the fifth, 189, and the sixth, 198. This yearly increase clearly shows not only that the school meets a keenly felt want, but also that its results are more and more appreciated. For, as a general rule, it is a sacrifice of the parents to keep such boys, as those for whom our institution is destined, three or four years after they have left the primary school, without any earnings; generally such boys have as soon as possible to earn something and contribute their part to the support of the family, even at the cost of progress and development.

From a pecuniary point of view, the admission of the boys is made as easy as possible, a contribution of 5 guilders (\$2) a year only being charged for each. And those parents who are not able to pay even this small sum, may easily obtain admission for their children on application to those supporters of the school, whose higher contributions give them the right to place one or more pupils free of cost. The boys must be from twelve to fifteen years old, and have to pass an easy examination in reading, writing, and arithmetic, before being admitted.

When the boys have successfully completed the course of three years, they are honorably dismissed, and the committee procures them good places as workmen, where, for five years longer, it still keeps them in view and exercises its influence for their welfare. The number of pupils honorably dismissed was, after the fourth year (thus at the termination of the first complete course), 28; the fifth, 31; and the sixth, 17, and unanimously their masters declare to have found them superior to their comrades in ability, development, and discipline. Their wages are considerably higher than those of other youths of the same age. At first they met with some opposition in the workshops, but now that three years' experience has proved them to surpass other young men in aptitude and good behavior, this prejudice is removed and they are received cordially by masters, foremen, and fellow-workmen.

Agriculture is destined to become the leading pursuit of the people of the Pacific Coast, and a technical education, furnished by the people for the people, will surely give due prominence to the agricultural school.

The States of Massachusetts, Maine, Iowa, Michigan, and Kansas, having devoted the proceeds of the agricultural land grant to separate and distinct agricultural colleges, where practical farming is made a part of the daily duty of each student, are already realizing large benefits therefrom. Fifty per cent. of their graduates are farmers and fruit growers, or teachers of the institutions of a mixed character which receive the proceeds of that endowment.

A memorial, prepared in 1862 by the Massachusetts Board of Agriculture and presented to the Legislature of that State, says: "Nothing is taught in our public schools which has any special bearing upon the future education of that large class whose lives are devoted to the cultivation of the soil; and stranger still, this class is the only one that cannot get the special instruction necessary for it anywhere else."

Though this is no longer true of Massachusetts, it is the case throughout nearly the whole extent of the United States.

PROVISIONS OF EUROPEAN GOVERNMENTS.

It will be instructive to compare the ample provisions of European governments for this kind of education with those of this country.

Prussia maintains four *Royal Academies of Agriculture*, at which both the theory and practice of farming are taught during two years, at a cost to each student of less than \$40 a year. Instruction is given in rural and political economy; in the management of trees and woods; in the mode of manufacturing sugar, beer, bricks, and draining tiles; in mineralogy, geology, botany, and chemistry, with experiments and excursions; and, lastly, in mathematics, trigonometry, land surveying, practical mechanics, veterinary surgery, rural law, the history of the country, and constitutional law. The persons who attend these academies are those who have to make a living by their own farms, commonly of small extent.

For amateurs, a less practical course is provided at institutes connected with the Universities of Halle and Berlin. There are nineteen provincial schools of agriculture below the academies, subsidized by the State to the amount of about \$10,000, and generally taught by some large farmer, assisted by the neighboring apothecary, school-master, and veterinary surgeon. There are also numerous special schools for particular branches, such as market gardening and the care of meadows and woods. *The care of fruit trees is taught in 134 schools in the ancient provinces alone.*

France has three higher agricultural and horticultural schools, with 22 professors and 142 students; one horticultural school at Versailles, with 10 professors and 41 students; twenty-seven farming schools, with 135 professors and 800 students; three practical schools of agriculture, with 21 professors and 90 students. All these are *State institutions*. The regular pupils pay a small fee, but farmers attend the lectures free of charge.

The object of these schools is, first, to induce young people to devote themselves to farming and gardening; and secondly, to intro-

duce the best methods of agriculture and horticulture into the country.

France has fifteen departmental agricultural schools, with over 20,000 students.

Württemberg has, first, the agricultural academy at Hohenheim, with 25 professors and 76 students; second, the popular agricultural evening and Sunday schools, with about 25,000 adult pupils, both male and female. These schools are free.

Denmark is becoming celebrated for her farmers' high schools, now supported by the government. There are now over eighty of these schools in the rural districts. The ages of pupils range between eighteen and thirty years. Everything is taught by lectures. The sessions continue for six months.

Similar schools, of three months' duration, are established in different localities, for the instruction of girls in house-keeping, needlework, and gardening.

Bavaria has three higher industrial schools, with 46 professors and 189 students; two hundred and sixty professional and Sunday schools, with 127 teachers and 14,501 pupils; 947 special agricultural courses, with 18,260 attendants; a school of forestry, with 135 students; and four higher schools of agriculture, with 76 professors and 315 students.

Sweden maintains several agricultural schools, besides the central school of agriculture.

Russia, who has within twenty years made such immense advances in the development of her resources, has scattered these schools with profuse liberality throughout her vast empire. Her great academy of agriculture and forestry, at Moscow, receives an annual appropriation of \$100,000 from the imperial government.

In Caucasia, she gives not only free tuition but bestows a small subsidy upon students. At Tiflis, board, lodging, books, and clothing are furnished to a limited number of students, with \$40 in money for the first, \$64 for the second, \$72 for the third, and \$80 for the last year of the course.

Japan has opened an agricultural college, complete in all its departments of theoretical and practical instruction.

SCHOOLS OF FORESTRY.

No report, however brief, upon the subject of technical education, would be complete without including the European schools of forestry.

The State of Connecticut last year commissioned the Secretary of the Board of Education to visit and report upon these schools. He says: "They have exerted a remarkable influence in diffusing among the people a general and genuine interest in arboriculture. They regard forests as their friends, and understand their climatic influence and economic value in staying spring torrents, preventing summer drouths, and supplying lumber and fuel. Hence, the wanton forest fires, so common in America, are comparatively unknown; the forest incendiary would be regarded as a common enemy, like the poisoner of an aqueduct, recklessly destroying that which it is the interest of all to preserve. The forest schools have created a public sentiment which constitutes the best possible protection of the woods."

These schools may be denominated as primary, middle, and higher or collegiate. As a type of the first class, we will take the course of study adopted in Sweden, which embraces: The first four rules of arithmetic, of proportion in whole and in decimal numbers; knowledge of scales for plan drawings, as far as is required for making maps and measuring distances; knowledge of square and cubic measures, with practical applications of the mensuration of the extent and contents of surfaces and solid bodies; knowledge of the organs of nutrition in forest trees and of their food, and of the natural conditions for their thriving; knowledge of the insects most dangerous to the Swedish forests, and of the manner of destroying them; the chief principles of rational forest economy, of marking and carrying timber, of the right kinds of soils and their preparation; hand-sowing and planting, saving of seeds, thinning and cutting of timber, different treatment of different classes of trees, etc.

The teacher must have been a graduate of the higher forest institute, and also a forest manager, in order to impart the necessary scientific and practical knowledge required.

In the Swedish Forest Institute, at Stockholm, the course of study is extended and liberal, and nearly all the graduates have received appointments as foresters or teachers of subordinate forest schools, of which there are six, supported by the government. From the report of 1867, it also appears that 21,850 pupils of the "folks," or common schools, received instruction in horticulture and tree planting.

One of the most celebrated forest schools of Europe is at Nancy, about 200 miles from Paris. It has fine museums and cabinets; the instruction is free to those who are preparing for the forest service of the State. When it is remembered that the State forests of France cover 3,000,000 of acres, and yield a revenue of over \$5,000,000 annually, the importance of *skilled* management will be appreciated. The course of study in the Nancy school occupies 10 hours a day for three years. Professor Northrop says the department of the Meurthe owes much of its rural beauty to the influence of this school.

The forest school of Saxony is at Tharandt, a watering-place a few miles distant from Dresden; the garden and nursery contains over 1,000 species of trees and shrubs.

The little Duchy of Hesse-Darmstadt has its forest school; Baden and Würtemberg also, while that of Bavaria enjoys a well earned celebrity. Austria, Poland, Italy, and Russia have numerous forest schools. Of England, Sir Joseph Hooker says: These institutions, which hold an honored place on the continent of Europe, and are distinguished among those which confer a liberal education, are unknown with us. We send our candidates, for the forest appointments in India, to France and Germany for instruction.

There is no school in the United States where any considerable attention is given to this most important subject. It would be well if California might take the lead in this respect, and by imparting a knowledge of the natural laws of forestry, arrest the process of denudation which rapidly tends to the impoverishment of the State.

SCHOOL GARDENS.

The biennial report of 1876-7 contained a translation of an account of European school work-rooms and school gardens, by Dr. Erasmus Schwab. These important adjuncts to public education are spread-

ing with great rapidity throughout Europe. They are developed according to the rank and situation of the school, whether in city or country, and depend for their success very largely upon the taste and refinement of the patrons. They promote health and refinement in the pupils, furnish innumerable object lessons for the teacher, and are maintained almost without expense. In Austria, their birth-place, landed proprietors are already offering large grounds for this purpose, with tasteful fences, and a stock of trees and plants for a beginning. Even the cities of Vienna and Chemnitz have found means of enlarging their school grounds, and affording the pupils these glimpses into nature.

Who that has noted the barrenness and desolation which surrounds too many of our school buildings would not welcome a change? And who that has the interests of the rising generation at heart cannot see in the school garden an opportunity to unify the influences of the home and school?

SCHOOLS FOR THE DOMESTIC ECONOMIES.

In cities and incorporated towns there is now an opportunity to establish vocation schools, in which domestic science, cookery, and sewing may be taught without interruption to the present work of the schools. Elsewhere these "special" schools, which are recognized under the new Constitution, have passed the experimental stage, and are adding new value to public education.

"Improvement schools," and Sunday schools for instruction in secular knowledge necessary to the common life, are made constituent elements of the common school systems of Europe, and in several countries attendance upon them is made compulsory.

From all these agencies our patriotic and enlightened citizens will select according to the needs of the population.

But little legislation is required to harmonize the claims of the new education with established institutions, and to give the required elasticity to our entire system of public education.

PART IV.—SUGGESTIONS AND RECOMMENDATIONS.

SUGGESTIONS AND RECOMMENDATIONS.

SCHOOL LIBRARIES.

During my term I have given much attention to the correction and improvement of the school library list.

The neglect of Trustees to secure the library books, and the illegal purchase of books not upon the list which are hawked about the country by itinerant agents; the successful efforts of book-sellers to foist refuse stock upon the school libraries, led me to recommend such a change in the law as would allow the use of this fund for the payment of teachers' salaries.

Since then the publication of facts respecting the enormous sale of trashy and demoralizing weeklies for boys, and of sensational stories for girls, with other considerations, induces me to recall that recommendation, and to urge upon teachers the duty not only of teaching their pupils to read, but how and what to read profitably. Mr. Charles Francis Adams, in an address to the teachers of Quincy, Massachusetts, has touched the heart of this subject:

The connecting link between school education and self-education we fail to supply. Though the school and the library stand side by side there is, so to speak, no bridge leading from one to another. As far as I can judge, we teach our children the mechanical part of reading, and then we turn them loose to take their chances. If the child has naturally an inquiring or an imaginative mind it perchance may work its way unaided through the traps and pitfalls of literature; but the chances seem to me to be terribly against it. I think this is all wrong. You, teachers, are able to give your scholars a general introduction into literature, which, if you do give it to them, is worth more than all the knowledge in all the text-books that ever were printed.

I am of the opinion that every teacher should be required, at the end of the term, to give a special report to the Trustees, upon the condition and use of the school library, and that the intelligent reading of library books, as determined by the teacher, should stand to the credit of pupils, and, when other things are equal, secure a higher standing in the monthly or term reports.

FREE TEXT-BOOKS.

The suggestions made in my last report concerning free text-books are renewed, and gain additional force from the fact that the text-book war is to be carried into every county in the State. The adoption of the plan which has worked so admirably elsewhere will reduce the consumption of books to a minimum, and by so much the prospective gains of the contestants. The best text-books in every subject of study in our schools are either in use, or upon the school library list, so that patrons and teachers are already familiar with their merits.

The better training of teachers will relegate the text-book to its true place in a scheme of education. They now occupy, in too many cases, the throne of the living teacher, and should be cast out as usurpers. There is no training in a text-book, and we mistake for it mere information which goes in at one ear and out at the other. There is a charm in the voice of the teacher, calling out the intelligence and quickening the activity of the pupil, which the printed or written word can never give. And this brings me to the most important of all suggestions, viz., that in every way that is possible to us we endeavor to increase the

PERMANENCY OF TEACHERS' POSITIONS.

Mr. Philbrick, in his summing up of the facts and lessons of the Paris Exposition, says: "It is believed that the barbarism of subjecting professional teachers to an annual election is unknown outside of our own country."

The loss of a good teacher is a public loss; the employment of a poor teacher is a public calamity also. The result of the uncertainty of teachers' positions is disastrous in every way—to the districts, where it furnishes a constant incentive to cabals and intrigues; to the teacher, who is often humiliated by the necessity of looking after a re-appointment rather than the best interests of the school; to vicious pupils, who are more difficult to control.

Dependence on the one side and patronage on the other destroy the free and harmonious play of benefits between the home and school. Private institutions, colleges, and seminaries draw away our best teachers, who thus avoid what is to a sensitive and high-minded teacher an intolerable burden. By general consent a teacher, who gives satisfaction during one school year, should be reasonably sure of retaining his place, if he desires, and thus be encouraged to become identified with the interests of the community.

A very serious evil to be guarded against arises from the

"FANATICAL BELIEF" IN THE VIRTUE OF EXAMINATIONS.

Examination has two distinct functions. One is disciplinary, a mere means of compelling attention, and perseverance in a course of study. The other is educational, a process of gathering up the facts that have been acquired, presenting them in their connections, and thus developing the subject to a degree not otherwise so easily attainable.

This educational part should be played all through a study as well as at its close, and played so as to make the student more and more confident of his powers. It is the only part to be taken either with dignity on its own side or to the lasting benefit of education. The other is the part of a watch-dog instead of a teacher.

It is only by using examinations helpfully that we can make them helpful. Adapted as they should be to what precedes, and what is to follow after them, too moderate to injure health of mind or body, true to their own functions, they are among the most serviceable of our agencies. Like everything else that is good, like exercise, like study, like enthusiasm, they can be perverted and turned into evil. Just as any other burdens, these may bend the shoulders and break the spirit.

The preparation and correction of examination papers in schools absorbs a large amount of time and force that might be better used. While it is wise to test instruction, it is unwise to make as much of testing as of instructing.

In moderating the requirements of our educational system, we shall find opportunity of improving the moral tone of the schools. Half the temptation to dishonesty, to which too many children are constantly yielding, would disappear with the strain to which I have been objecting.

Other good qualities besides truthfulness would have a better chance of cultivation. Courage, vigor, thoroughness in detail, especially in that which is comparatively unobtrusive, high-mindedness—these are results of infinitely greater value than the highest percentages. They cannot grow—indeed they cannot live under the driving wind that has been allowed to sweep through our schools.

There is an opposite extreme to be guarded against. It is keeping back pupils when fully prepared to advance.

This does not teach patience, but exhausts it; does not kindle ardor, but quenches it.

There is something absolutely wrong in shutting up a pupil between the pages of a book, or the limits of any exercise, long after his work is done, merely because the work of his fellow-pupils is not done. If we drag him down to their level, he can do nothing to lift them a hair's breadth to his; his, indeed, ceases to be his, and the brightness he brought with him into the school may be extinguished perhaps for life. *Our promotions should not be merely bolts drawn against slower or idler children, but swinging gates through which the quick and earnest can go forth rejoicing.*—Honorable Samuel Elliot.

I would beg our teachers and school managers to remember that "all the paraphernalia of rewards and punishments, ranks, percentages, extras, merits, checks, and the like, are among the chief hindrances to moral and intellectual life. Organizations, methods, regulations, and customs, not properly educational, have so pressed upon what is educational as to squeeze the very life out of it at times. The situation, so far as it continues, should be reversed. Accidentals should give way to essentials, and the ground be cleared as for an upward growth."

The following is the regulation of the State Board of Education :

Examinations for promotion should be discouraged, because they consume much valuable time that can be more profitably spent, and tend to make promotion and not *thoroughness* the leading object of the pupils.

Except in questionable cases, the qualifications for promotion should be determined from the term records of the school.

Not a single object is gained by these examinations, except loss of time, impaired health and mental vigor, that is not better obtained by the term standing of the pupils. Their tendency is only evil, and that continually. In spite of remonstrance the slaughter of the innocents has gone on, until, in some cases, enterprising merchants have been allowed to advertise their business by offering prizes for competitive standing in schools, local school boards, like directors of agricultural fairs, lacking the courage to resist a perverted public opinion. Our medical societies have repeatedly entered their protest against these abuses.

There is at present an exaggerated estimate placed upon teachers' examinations. Competitive examinations for teachers' positions are liable to great abuse, unless the examining boards are as wholly independent and free from local influence as it is possible to make them.

LOCAL SCHOOL MANAGEMENT.

There are at present 1,999 school districts in the State, managed by over 5,997 persons. The powers and duties of these officials are clearly defined by Sections 1617 to 1624, inclusive, of the Political Code. They have the immediate expenditure of all of the public school moneys, State and county. If the duties assumed by each Trustee on taking the oath of office were faithfully performed, we should have good schools, earnest, faithful, and permanent teachers, instead of professional tramps and make-shifts. If the people were alive to the importance of electing only the most capable and public-spirited citizens, men or women, to this important office, *one-half* the amount now expended would secure results fully equal to the present. In other words, *one-half* the school money is wasted through the incapacity and neglect of local officers, and this evil is of such magnitude, and is now so universally acknowledged, that several States are moving to substitute the township system of supervision for that

of District Trustees. In thickly settled communities this would undoubtedly increase the efficiency of management, but the great need is for the body of the people to understand three things:

First—That a cheap school is usually a poor school.

Second—That a poor school is a questionable advantage over none at all.

Third—That the worst enemies of the public schools are those who sit supinely and allow the interests of the schools to drift into the hands of one or more ignorant but willful persons, who use the trusteeship as a stepping-stone to other offices.

The School Trustee who never examines the books in the library, never visits the school, never reads an educational journal, never attends a Teachers' Institute, may not be aware that he is bringing the school system into merited contempt, that he is a clog upon such improvements as a live teacher would be glad to introduce, and that in nine cases out of ten some competent woman in the district would gladly discharge the duties shirked by him. But these are disagreeable truths, which it is far better to meet openly than in the evil results of half educated and badly educated children. The beginnings of school reform are to be made right here, in the fuller, completer, more effective organization of local public sentiment around its local school. The social improvement of our rural neighborhoods depends more than upon any other agency in making the school house and grounds an exponent of whatever refinement, culture, and public spirit there is in the community.

METRIC SYSTEM.

Every community should add the weight of its influence to any movement which assists the progress of civilization. Such a movement is the effort to establish a uniform system of weights and measures, "a blessing of such transcendent magnitude," John Quincy Adams said, "that if there existed upon earth a combination of power and will adequate to accomplish the result by the energy of a single act, the being who should exercise it would be among the greatest benefactors of the race."

It is almost incredible that a system which was legalized in 1866, by Act of Congress, and now in general use among scientists, in laboratories and manufactories, used by the coast survey and in the United States service, by physicians and druggists, which is adopted in France, Germany, Holland, Belgium, Spain, Portugal, Italy, Austria, Switzerland, Greece, Denmark, legalized in Great Britain and in India, should need to be urged upon the teachers of our public schools, not for *general* use at the present moment, but as a *thing to be mastered by every pupil*. It is my earnest hope that our Legislature will render instruction in the metric system obligatory in every grammar school.

THE SPELLING REFORM.

Inasmuch as several State Legislatures have appointed committees to consider the feasibility of printing State papers in a reformed spelling, and as a memorial to Congress is being indorsed by school boards and teachers' associations all over the United States, praying Congress to appoint a commission to determine what action the gov-

ernment should take to promote this reform, it cannot be inappropriate to present the leading arguments in the case.

A measure in which the most eminent of British scholars and statesmen, with Mr. Gladstone at their head, with the earnest advocacy of Professors Whitney, March, Haldeman, and a host of others, devoting their time, money, and best energies to its furtherance, is sure to have a hearing ere long on this side of the continent.

The principal arguments against the present orthography may be summed up as follows:

In the first place, there is the practical inconvenience which we suffer both in learning and using language. This is one of the weightiest matters, and appeals especially to us as teachers. And we have become so accustomed to the burden that we hardly realize how much of our learning time is taken up with mastering orthographical intricacies. We do not realize how much harder it is for us to learn to read at all in the first place, and then how much harder it is for us to read and write readily and correctly, than it would be if we wrote as we speak. What a relief it would be if we were sure of the pronunciation of every word we meet, and of the spelling of every word we wish to use. How much time and patience would be saved in the school-room if spelling-book and spelling lessons could become things of the past.

Then look also to the difficulties which foreigners encounter in trying to acquire our language. "The English language, from the simplicity of its grammatical structure, would be one of the easiest in the world to learn, if it were not for its abominable spelling. As it is, a stranger may acquire the spoken tongue by mouth and ear, or he may acquire the written tongue by grammar and dictionary. But, in either case, one tongue being learned, the other tongue will be almost as strange to him as if he had never heard or seen its counterpart. He really has acquired two different languages." (Whitney.)

The education of the freedmen and the Indians in our own country is hindered by our eccentric spelling more than by any other one cause. The spread of the English language in China and Japan is greatly retarded by the same cause. Missionaries complain that the missionary work of the world is hindered by our irregular spelling. If we wish the English language to spread, and to become the world language, we have no right to hand it down to posterity, as Professor Whitney says, "with such a mill-stone about its neck."

We may laugh as we will at this matter of spelling reform, as expressed in dollars and cents; but this pecuniary argument is by no means an insignificant one. In the first place, consider that all teachers below the high school grades have to spend from one-quarter to one-eighth of their time in teaching our children to read and spell. These teachers receive from \$30 to \$60 per month. On the lowest estimate, there is thus spent \$50 per year, in the case of every teacher, for the drill work in reading and spelling, of which work at least nine-tenths is made necessary by our absurd and irregular orthography. In Chicago there are over 600 teachers to whom this estimate will apply. There you have \$30,000 per year spent in a way that is unnecessary, and which might be turned to some good account.

There are at least \$15,000,000 spent in our country every year in the effort to teach a system of spelling that is false and inconsistent; in which, instead of utilizing natural forces, and proceeding according to the current of the child's common sense and feeling of analogy, we

labor directly against it. And to make the matter worse, when the money is spent and the instruction given, our children after all are not enabled to read and spell their own language.

Then look at the matter of printing. Upon the most moderate estimate, omitting simply silent and unnecessary letters, about seven per cent. of the number of letters is saved, consequently saving seven per cent. of the cost of type-setting and book-making. We look upon seven per cent. as a good rate upon investments. Is it not worth while to attend to it here? Suppose \$65,000,000 (a very low estimate) is the annual cost of production in books, newspapers, and periodicals, there will be an annual saving of over four and a half millions. But more than this. All this matter has first to be written, and here our seven per cent. must come into the account again.

A constant spelling would awaken and educate the phonetic sense of the community, and tend to uniformity and fixedness of pronunciation. So loose and uncertain is now the tie between writing and utterance, that existing differences of pronunciation hide themselves under the cover of an orthography which fits them all equally well. The largest part of our conservative force is spent upon the visible form alone. We do not give much heed to the audible form.

We had spelling matches in abundance, but not pronouncing matches. Whereas, if our spelling and pronouncing were more strictly in accord, every effort to preserve the spelling would likewise tend to perpetuate the pronunciation. A phonetic orthography would become an authoritative and intelligible standard of pronunciation, and thus directly tend to remove the more marked differences of usage between cultivated speakers of different localities. Thus phonetic spelling would operate as a protector and preserver of our mother tongue.

From a strictly educational point of view, there is an argument more serious than all others. It is the actual mischief done by subjecting young minds to the illogical and tedious drudgery of learning to read and write English as spelled at present. Everything they have to learn in spelling and pronunciation is irrational; one rule contradicts another, and each statement has to be accepted simply on authority, and with a complete disregard of all those rational instincts which lie dormant in the child, and which it is one of the highest functions of education to awaken by every kind of healthy exercise.

"I know," says Max Müller, "there are persons who can defend anything, and who hold that it is due to this very discipline that the English character is what it is; that it retains respect for authority; that it does not require a reason for everything; and that it does not admit that what is inconceivable is therefore impossible. Even English orthodoxy has been traced back to this hidden source. A child accustomed to believe that t-h-o-u-g-h is though, and that t-h-r-o-u-g-h is through, and that c-o-u-g-h is cough, and r-o-u-g-h is rough, will afterwards believe anything."

Does not Lord Lytton, from this standpoint, express the matter most justly, when he characterizes our system as a "lying, round-about, puzzle-headed delusion, confusing the clear instincts of truth, and born of the devil?"

It has been well said that no person, in full possession of his faculties and in full exercise of his common sense, can spell the English language. "The child can put no trust in the symbol; he cannot

believe his eyes; he can put no trust in the sound; he cannot believe his ears." There is no attainment so hard to acquire as learning to read, and there is nothing which has so little value for us as a means of sound mental discipline. Thus stands the case. "Every theoretical and practical consideration weighs heavily in favor of reform. There is absolutely no argument against it, excepting one—the inconvenience of making the change. No one can defend the present system of spelling. Every one must admit its serious injury to the cause of education, and the great trouble it causes us through life. The practical advantages of phonetic spelling cannot be denied."

As things are now, the English speaker comes to the study of a foreign written language at a disadvantage, when compared with those to whom other tongues are native. He has been accustomed to regard it as only natural and proper that any given sign should possess a number of different sounds. It requires a special education to give him an inkling of the truth that every letter of our alphabet had originally, and still preserves in the main outside of our own language, a single unvarying sound. That the phonetic sense of the community needs training, there is no better evidence than the fact that the English speaker has his sense of the fitness of things so debauched by a vicious training, that he is capable of regarding an historical spelling as superior to phonetic spelling: that he can possibly think it better to write our words as we imagine somebody else pronounced them a long time ago, than as we pronounce them ourselves.—*Whitney*.

Instead of a phonetic spelling contributing to the alteration and damage of the language, as is charged, "it would exert a conserving influence."

THE KINDERGARTEN.

St. Louis is the experimental field of the Kindergarten in America, where it owes its great success to the efforts of Miss Susan E. Blow, who has devoted herself to it; and to the active encouragement of the City Superintendent, Mr. Harris. There are fifty public Kindergartens in that city, costing an average of \$500 each. The material used for the work-play of the pupils costs about \$1 each, and is collected from all except indigent scholars.

The cost of tuition is necessarily too great to be met under present conditions, but to the ordinary pro rata provision for primary teaching enough might be obtained in all our cities by subscription to maintain one or more Kindergartens.

Among other means of extending Kindergarten instruction, I would suggest that in our larger cities young ladies, who are graduates of a Kindergarten normal class be furnished with sub-primary classes, a suitable room, and the necessary apparatus, teaching without salary for three months. Their experience would compensate them for their trouble, and the value of such a preparatory course would be inexpensively shown. This has been done in St. Louis with the most satisfactory results.

It is desirable that the Legislature take some suitable action to assist in carrying into effect measures which have been pending in Congress for several years, providing for the permanent investment of the proceeds of the sales of the public lands annually accruing, as a national fund, the income from which shall be apportioned among the several States and Territories and the District of Columbia (for the first ten years), on the basis of illiteracy in the several States and Territories, under the supervision of the Bureau of Education, upon a proper basis of distribution, for the benefit of the common schools, normal education, and for the more complete endowment and support of the technical and industrial colleges already established in the several States under the Act of Congress, approved July 2d, 1862.

PART V.—WORK OF THE SUPERINTENDENT.

DUTIES OF THE STATE SUPERINTENDENT.

The office of Superintendent of Public Instruction has been popularly regarded as one of the minor offices of the State Government. Few even of our law-makers have carefully considered the variety of duties which devolve upon the incumbent under the Codes, or have reflected upon the natural results of the growth of our educational system as affecting the labors to be performed. I consider it a duty which I owe to the public, even more than to myself, and a possible aid to future legislation, to present a summary of the work of this department.

In addition to the duties specified under Article II, of the school law, the Superintendent is Secretary of the State Board of Education. It is his duty to call its meetings, prepare its business, and to keep a faithful record of its transactions.

He is Chairman of the State Board of Examination, consisting of four teachers appointed by him.

He is ex officio a member of the Board of Regents of the State University.

He is ex officio a member of the Board of Trustees of the State Normal School.

1505. The Superintendent of Public Instruction must visit the school from time to time, inquire into its condition and management, enforce the rules and regulations made by the Board, require such reports as he deems proper from the teachers of the school, and exercise a general supervision over the same.

Sections 1532 and 1533 of the school law further define the duties of Superintendent, as follows:

First—To superintend the public schools in this State.

Second—To report to the Governor, on or before the 15th of November, of the years on which the regular sessions of the Legislature are held, a statement of the condition of the State Normal School, and other educational institutions supported by the State, and of the public schools.

Third—To accompany his report with tabular statements, showing the number of school children in the State; the number attending public schools, and the average attendance; the number attending private schools, and the number not attending schools; the amount of State School Fund apportioned, and sources from which derived; the amount raised by county and district taxes, or from other sources of revenue, for school purposes; and the amount expended for salaries of teachers, and for building school houses.

Fourth—To apportion the State School Funds, and furnish the Controller, State Board of Examiners, and each County Treasurer and County Superintendent, with an abstract of such apportionment.

Fifth—To draw his order on the Controller in favor of each County Treasurer for school moneys apportioned to the county.

Sixth—To prepare, have printed, and furnish to all officers charged with the administration of the laws relating to public schools, and to teachers, such blank forms and books as may be necessary to the discharge of their duties.

Seventh—To have the law relating to public schools printed in a pamphlet form, and annex thereto forms for making reports and conducting school business, the course of study, rules and regulations, a list of text-books and library books, and such suggestions on school architecture as he may deem useful.

Eighth—To supply school officers and teachers, school libraries, and State libraries, with one copy each of the pamphlets mentioned in the preceding subdivisions.

Ninth—To visit the several orphan asylums to which State appropriations are made, and examine into the course of instruction therein.

Tenth—To visit the schools in the different counties, and inquire into their condition; and the actual traveling expenses thus incurred, provided they do not exceed \$1,500 per annum, shall be allowed, audited, and paid out of the General Fund, in the same manner as other claims are audited and paid.

Eleventh—To authenticate, with his official seal, all drafts or orders drawn on him, and all papers and writings issued from his office.

Twelfth—To have bound, at an annual expense of not more than \$150, all valuable school reports, journal, and documents in his office, or hereafter received by him, payable out of the State School Fund.

Thirteenth—To deliver over, at the expiration of his term of office, on demand, to his successor, all property, books, documents, maps, records, reports, and other papers belonging to his office, or which may have been received by him for the use of his office.

1533. The Superintendent of Public Instruction must report to the Controller, on or before the 10th day of August of each year, the total number of children in the State, between the ages of five and seventeen years, as shown by the latest reports of the School Superintendents on file in his office.

The blanks required for the transaction of business with this office are as follows:

- Census Marshal's Report.
- Notice of Election for School Trustees.
- Notice of Election for School Tax.
- Certificate of Election of School Trustees.
- Certificate of Appointment of School Trustees.
- Appointment of Census Marshal.
- County Superintendent's Report of Census Returns.
- Certificate of Election of District Clerk.
- School Trustees' Report.
- Teacher's Report.
- Agreement between Trustees and Teacher.
- Annual Report of the condition of Common Schools.
- Report of County Board of Examination of applicants for State certificates.
- Superintendent's order for blanks.
- County certificates—First grade.
- County certificates—Second grade.
- County certificates—Third grade.
- School Register.
- Trustees' Order on County Superintendent.
- Superintendent's Warrant.
- Public School Library labels.
- County apportionment.

An account is kept with each county for these blanks. No small amount of labor is required in their distribution, together with that of the Codes, reports, circulars, etc., etc.

The apportionment of State school funds is made twice each year; first in February, when the State tax is due; and again in August, when all delinquent and other taxes which belong to the School Fund have been paid in. Although the work is doubled by this arrangement, it has been deemed necessary for the best interests of the schools. These apportionments amounted to \$1,423,941 75 during the last fiscal year.

The annual reports of County Superintendents contain separate statistical returns, comprising census returns, financial statements, valuation of school property, reports of county examinations of teachers, lists of District Clerks, and miscellaneous reports on the progress of schools and the condition of school libraries.

The careful comparison of these with former reports and their tabulation is the most complicated and difficult work of the department. The frequent necessity of returning reports for correction involves tedious delay and correspondence. When completed the

State Superintendent can trace the moneys raised from taxation, and the interest arising from the School Fund, from the county treasury into the State treasury, thence back to the county treasuries after apportionment, to the School Trustees, until every dollar is accounted for.

The various modifications of the school law which have taken place since its first publication, and the frequent changes and imperfections of local administration, give rise to many differences which either come before the Superintendent in his advisory capacity, or more formally as cases of appeal from County Superintendents. Much unnecessary and expensive litigation, with other disasters to the school interest, is saved by these decisions, which are filed, abstracts of evidence taken, and the important points made matters of official record. More than two hundred of these quasi-judicial decisions, with the concurrent opinion of the Attorney-General, have been made during my term of office.

To meet a pressing necessity, a Directory has been published annually, giving the names and post-office address of each school officer of the State and counties, each school district, and District Clerk.

There has also been published biennially a revised edition of the School Law; containing, also, the rules and regulations of the State Boards of Education and of Examination, and a revised list of the School Library books.

Circulars of information have been issued from time to time, which, like the above-named documents, have been furnished to each district through the County Superintendents.

COUNTY INSTITUTES AND OFFICIAL VISITS.

The State Superintendent is required to visit the different counties of the State; to consult with the teachers and school officers, as far as practicable; to attend the meetings of the County Institutes and Educational Associations; his actual traveling expenses being provided for to the amount of \$1,500.

Upon entering upon the duties of the office in 1876, I found that County Institutes had fallen into disrepute, and a disposition manifested itself in the Legislature to repeal those sections of the school law which were intended to insure their benefits. In many counties, which had never been visited by the State Superintendent, and had not employed a competent Institute instructor, these meetings were little more than compulsory debating societies, of doubtful benefit to teachers or the schools.

The imperative need of some agency for supplying the want of *professional* training in the case of teachers who have none, led me to make the Institute work more prominent in the division of my duties. I cannot speak too highly of the encouragement I have had in the Institute labors of Professors Allen and Norton, who have thus carried the Normal School into nearly every county of the State. Mr. Swett, Mr. Lyser, and other experienced teachers, have also rendered valuable service.

One hundred and twenty County Institutes and State Teachers' Associations have received the assistance of my deputy and myself. Some in the remoter counties could not be attended, their Institutes occurring at the same time with others for which previous engage-

ments had been made. We have attended Institutes in thirty-eight counties, and made over three hundred official visits to schools.

STATE AND COUNTY EXAMINATIONS.

The most trying and difficult work of the Superintendent has been that relating to State and county examinations for teachers' certificates. The quarterly preparation of a State series of questions, upon twenty different subjects, is in itself no trifling labor, and as the State Board of Examination is appointed by the Superintendent, the responsibility of final selection, of the custody and proper transmission to the county officers rests with him. The work of preparing the questions is divided among the members of the Board, who are teachers of high standing in the profession. None of them are in possession of the completed set until the examination is closed, the chairman being responsible for their safe-keeping.

Two thousand two hundred and fifty applicants were examined in the counties during the year ending June 30th, 1879. Fourteen hundred county and State certificates were granted. From 800 to 1,000 sets of examination papers are presented annually to the State Board, and receive a careful examination.

Formerly all candidates for State certificates were examined at Sacramento. To save expense to the candidates, and the labor of preparing different sets of questions quarterly for State and county examinations, this practice was changed by my predecessor, and, as permitted under Section 1715 of the School Law, State certificates have since been granted upon the papers prepared in examinations before County Boards, provided that the papers were sent up within fifteen days from the close of the examination. The candidate, at the opening of each examination, is required to state whether he or she is examined for a State certificate. The State Board remain the sole judges whether applicants have attained the requisite standard of proficiency, and their examination is entirely independent of that of the County Boards. The labor connected with the issuance of State certificates may be inferred from the number granted.

The standing of each successful applicant in each of the twenty subjects treated, as determined severally by State and County Boards, is permanently recorded in a ledger kept for that purpose. It is also indorsed upon the back of each certificate. But for these records teachers would be unprotected, Trustees uncertain as to their qualifications, and a large per cent. of the benefits of the school appropriations worse than lost, for no money can compensate for the misdirection of early education.

The work of the State Board of Examination has quadrupled during the last few years, without any increase of the salary of its members. The granting of educational diplomas, of recommendations for life diplomas, of first grade certificates upon the life certificates, and State Normal School diplomas of other States, as well as of State certificates, upon examinations, and the renewals of these, is their official duty. To accomplish this work a semi-weekly session is required. The salary, \$200 per annum to each member, is entirely disproportionate to the amount or the quality of the service performed. It has been necessary for the Chairman to relieve the board of the large correspondence incident to this work, and of other routine duty.

In consequence of frequent complaints of the fraudulent use of examination questions the present board, at its first session, decided to issue only one set to each County and City Superintendent, who had previously been supplied with an indefinite number, more than sufficient for the use of each candidate and member of the examining boards. These had been sent out some weeks in advance, by mail or express, bearing the printed label, "Quarterly Examination Questions." Under the new management, the chances of fraud were greatly reduced. The printing was done privately, at the expense of the Superintendent and members of the board, until the papyrograph process of duplicating copies came into general use, and was adopted here as giving the greatest possible security against carelessness and fraud. The cost of the papyrograph was defrayed by me, and the entire work of preparing the duplicates done by my deputy or myself, with the exception of a single examination, when, during my absence, the acting Chairman of the board assumed the responsibility.

A reasonable time was allowed for the transit of the questions to their various destinations, the date of mailing entered upon a private register, and receipts from Superintendents required on arrival. The outer envelop had no official stamp; the inner one, securely closed, bore the clear and explicit direction, "not to be opened until the morning of the examination, *in the presence of the class, the Chairman, and at least one member of the Board of Examination.*"

No clerk or employé of the Superintendent's office had access to the questions at any time. A set was prepared, sealed, and deposited in a private safe, for each member of the State Board of Examination, and such other parties as were entitled to copies, marked, "*to be distributed after the examination.*"

By these and other precautions the responsibility for the proper use of the questions, and the consequent prevention of frauds, was divided between three equally responsible classes of officials, viz., the State and County Superintendents, and those of the United States mail service.

Not all the County Superintendents reside at the county seat, and some of the county seats have not express offices, hence the above was the only plan which would work uniformly. The saving to the State by the plan adopted, as shown by the accounts of Superintendent Bolander, has not been less than \$1,200 per annum. The stringent regulations of the State Boards, *whenever obeyed*, secured its complete success.

The alleged frauds in examinations had been reduced to the minimum and were believed to be confined to San Francisco and the neighborhood, when, during the session of the Constitutional Convention, advantage was taken of an exposé of frauds in that city to break up the present system of examinations and substitute that of twenty years ago. It would be as reasonable to abolish banks because bank officials are not always faithful to their obligations. Dishonesty and favoritism cannot be eradicated by changing the field and multiplying the agencies of temptation.

The official correspondence has increased with each year, until it now averages not less than five hundred letters and communications per month. Prior to my incumbency, the Superintendent's decisions

were published in the California Teacher, which was the official organ of the department. The withdrawal of State support to that journal, by Act of the Legislature of 1876-7, has made it impossible to accomplish the legitimate work of the office without an addition to the clerical force.

No provision has been made to meet this necessity. A deputy and one clerk only are allowed by law. While the clerk has performed a reasonable amount of service, the deputy and myself have been occupied not less than ten hours daily, in addition to the work of an extra clerk employed at my own expense.

One hundred and fifty volumes of reports and educational works have been added to the library of the office. A still greater number of valuable educational exchanges with other States and countries require additional space and shelf-room.

PART VI.—STATISTICAL SUMMARY

STATISTICAL SUMMARIES.

The actual and comparative condition and progress of the public schools of California, for the two years commencing July 1st, 1877, and ending June 30th, 1879, may be summarized as follows:

I. CENSUS STATISTICS.

	1878.	1879.
<i>(a.) Enumeration of Children.</i>		
Number of white boys between the ages of 5 and 17 -----	100,672	108,235
Number of white girls between the ages of 5 and 17 -----	102,499	105,813
Number of white children between the ages of 5 and 17 -----	203,171	214,048
Number of white children between the ages of 5 and 17 in 1877 -----		196,794
Increase -----		17,254
Number of negro boys between the ages of 5 and 17 -----	579	647
Number of negro girls between the ages of 5 and 17 -----	545	625
Number of negro children between the ages of 5 and 17 -----	1,124	1,272
Number of negro children between the ages of 5 and 17 in 1877 -----		1,199
Increase -----		73
Number of Indian boys between the ages of 5 and 17 -----	646	591
Number of Indian girls between the ages of 5 and 17 -----	534	493
Number of Indian children between the ages of 5 and 17 -----	1,180	1,084
Number of Indian children between the ages of 5 and 17 in 1877 -----		1,047
Increase -----		37
Total number of census children between the ages of 5 and 17 -----	205,475	216,404
Total number of census children between the ages of 5 and 17 in 1877 -----		200,067
Increase -----		16,337
Number of white children under 5 years of age -----	84,296	85,870
Number of negro children under 5 years of age -----	393	384
Number of Indian children under 5 years of age -----	372	379
Total number of children under 5 years of age -----	85,061	86,633
Total number of children under 5 years of age in 1877 -----		88,951
Decrease -----		2,318
Total number of children under 17 years of age -----	289,535	293,037
Total number of children under 17 years of age in 1877 -----		289,018
Increase -----		4,019

The percentage of increase of census children from 1866 to 1879 is as follows :

From 1866 to 1867.....	10.80 per cent.
From 1867 to 1868.....	8.30 per cent.
From 1868 to 1869.....	8.28 per cent.
From 1869 to 1870.....	10.04 per cent.
From 1870 to 1871.....	6.84 per cent.
From 1871 to 1872.....	5.56 per cent.
From 1872 to 1873.....	3.10 per cent.
From 1873 to 1874.....	No comparison possible.
From 1874 to 1875.....	7.42 per cent.
From 1875 to 1876.....	7.71 per cent.
From 1876 to 1877.....	8.27 per cent.
From 1877 to 1878.....	2.70 per cent.
From 1878 to 1879.....	5.32 per cent.

(1.) AT PUBLIC SCHOOLS.

	1878.	1879.
<i>(b.) School Attendance of Census Children.</i>		
Number of white children who have attended public schools at any time during the school year.....	137,497	143,892
Number of negro children who have attended public schools at any time during the school year.....	767	658
Number of Indian children who have attended public schools at any time during the school year.....	333	256
Total number of census children who have attended public schools at any time during the school year.....	138,597	144,806
Average number of census children belonging to public schools ----	103,006	105,837
Average daily attendance of census children.....	94,696	98,468
Percentage of total number enrolled.....	67.45	66.91
Percentage of total number enrolled in 1877.....		67.64
Percentage of average number belonging.....	50.13	48.95
Percentage of average number belonging in 1877.....		48.74
Percentage of daily attendance.....	46.08	45.50
Percentage of daily attendance in 1877.....		44.75

In other words, from July 1st, 1878, to June 30th, 1879, 144,806 were enrolled in the public schools, while the average number belonging, the actual pupils of the school, were 105,837, and only 98,468 were in daily attendance during the whole time school was maintained.

The following table exhibits the percentage of daily attendance, average number belonging, and enrollment, from 1866 to 1879:

YEAR.	Listed on Census.	Enrolled in Public Schools.	Percentage Enrolled.	Average Number belonging to Public Schools.	Percentage.	Average Daily Attendance.	Percentage.
1866 -----	85,152	37,906	44.51	28,232	33.15	-----	-----
1867 -----	94,349	54,726	58.00	41,411	43.89	-----	-----
1868 -----	102,183	60,946	59.64	45,667	44.69	-----	-----
1869 -----	110,642	67,834	61.31	54,168	47.15	-----	-----
1870 -----	121,751	70,030	57.44	50,155	41.19	-----	-----
1871 -----	130,116	83,628	64.27	65,949	50.68	-----	-----
1872 -----	137,351	92,255	67.55	71,481	51.04	64,375	46.86
1873 -----	141,610	97,681	68.96	71,170	50.26	63,063	44.53
1874 -----	159,717	105,890	66.29	70,279	44.00	63,651	39.85
1875 -----	171,563	116,896	68.14	77,350	45.08	69,658	40.60
1876 -----	184,787	126,220	63.80	91,784	49.66	83,391	45.13
1877 -----	200,067	135,335	67.64	97,527	48.74	89,539	44.75
1878 -----	205,475	138,597	67.45	103,006	50.13	94,696	46.08
1879 -----	216,404	144,806	66.91	105,837	48.95	98,468	45.50

(2.) AT PRIVATE SCHOOLS.

	1878.	1879.
Number of white census children who have attended only private schools at any time during the school year -----	15,242	15,350
Number of negro census children who have attended only private schools at any time during the school year -----	20	63
Number of Indian census children who have attended only private schools at any time during the school year -----	48	19
Total number of census children who have attended only private schools at any time during the school year -----	15,310	15,432
Percentage of census children who have attended only private schools -----	7.45	7.04
Percentage of census children who have attended only private schools in 1877 -----	-----	7.67

Percentage of number of census children attending private schools from 1866 to 1879:

YEAR.	Listed on Census.	Enrolled in Private Schools.	Percentage.
1866 -----	85,152	25,475	29.92
1867 -----	94,349	18,182	19.38
1868 -----	102,183	17,654	17.28
1869 -----	110,642	17,344	15.68
1870 -----	121,751	24,654	20.33
1871 -----	130,116	17,029	13.50
1872 -----	137,351	13,787	10.04
1873 -----	141,610	12,507	8.84
1874 -----	159,717	14,149	8.86
1875 -----	171,563	15,021	8.75
1876 -----	184,787	14,625	7.90
1877 -----	200,067	15,344	7.67
1878 -----	205,475	15,310	7.45
1879 -----	216,404	15,432	7.14

(3.) AT NO SCHOOLS.

	1878.	1879.
Number of white census children who have not attended any school during the school year	49,475	55,186
Number of negro census children who have not attended any school during the school year	323	528
Number of Indian census children who have not attended any school during the school year	606	655
Total number of census children who have not attended any school during the school year	50,674	56,369
Percentage of census children who have not attended any school during the school year	24.66	26.05
Percentage of census children who did not attend any school during the school year in 1877		24.51

Since 1866 the non-attendance of census children has been as follows:

YEAR.	Listed on Census.	Attended no School.	Percentage.
1866	85,152	21,771	25.57
1867	94,349	21,441	22.62
1868	102,183	23,583	23.08
1869	110,642	25,464	23.01
1870	121,751	27,067	22.23
1871	130,116	29,459	22.64
1872	137,331	30,781	22.41
1873	141,610	31,422	22.19
1874	159,717	39,678	24.84
1875	171,563	39,646	23.11
1876	184,787	43,023	23.29
1877	200,067	49,035	24.51
1878	205,475	50,674	24.66
1879	216,404	56,369	26.05

TO RECAPITULATE.

	1878.	1879.
Total number of census children who have attended public schools at any time during the school year	138,597	144,806
Total number of census children who have attended only private schools at any time during the school year	15,310	15,432
Total number of census children who have not attended any school during the school year	50,674	56,369
Percentage of census children enrolled in public schools	67.75	66.91
Percentage of census children enrolled in private schools	7.48	7.04
Percentage of census children who have not attended any school	24.77	26.05

But, in order to obtain a correct estimate of the attendance at school of census children, we must take the average number belonging—that is, the number of children who can be considered as actual pupils of the public schools—instead of the total number enrolled, as in this number are included all those who attend for so short a time—sometimes only for a day, or, at longest, for a week—that they cannot be classed as pupils of the public schools. The real school attendance will then stand as in the following table:

	1878.	1879.
Number of census children attending public schools	103,006	105,837
Number of census children attending private schools	15,310	15,432
Number of census children not attending any school	50,674	56,369
Percentage of census children attending public schools	60.95	59.58
Percentage of census children attending private schools	9.06	8.69
Percentage of census children not attending any school	29.99	31.73

(c.) NATIVITY OF CENSUS CHILDREN.

For 1878 the Census Marshals reported the nativity of 276,419 children, not more than 17 years of age. According to these reports, we had in this State, in 1878:

Native born children, both parents native born	130,236
Native born children, one parent foreign born	31,791
Native born children, both parents foreign born	106,794
Foreign born children	7,598

Or, expressed in percentages, in 1878:

Per cent. of our children of native born parents	47.12
Per cent. of our children who had one foreign parent	11.50
Per cent. of our children who were of foreign parents	41.38

For 1879 the Census Marshals reported the nativity of 294,329 children, not more than 17 years of age. According to these reports, we had in this State, in 1879:

Native born children, of native born parents	135,860
Native born children, one parent foreign born	37,332
Native born children, both parents foreign born	114,309
Foreign born children	6,828

Or, expressed in percentages, in 1879:

Per cent. of our children of native born parents	46.15
Per cent. of our children who had one foreign parent	12.68
Per cent. of our children who were of foreign parents	41.17

II. SCHOOL STATISTICS.

	1878.	1879.
<i>(a.) Number of Districts and Schools.</i>		
Number of school districts -----	1,929	1,999
Number of school districts in 1877 -----		1,828
Increase -----		171
Number of first grade schools -----	1,003	999
Number of first grade schools in 1877 -----		914
Increase -----		85
Number of second grade schools -----	972	1,081
Number of second grade schools in 1877 -----		983
Increase -----		98
Number of third grade schools -----	619	663
Number of third grade schools in 1877 -----		627
Increase -----		36
Total number of schools -----	2,578	2,743
Total number of schools in 1877 -----		2,485
Increase -----		258

NOTE.—Under "First Grade Schools" are included High Schools, Grammar Schools, and First Grade Schools. Under "Second Grade Schools" are included Intermediate and Second Grade Schools. Under "Third Grade Schools" are included Primary and Third Grade Schools.

	1878.	1879.
<i>(b.) School Attendance.</i>		
Whole number of boys enrolled on Register -----	80,551	81,206
Whole number of girls enrolled on Register -----	73,513	75,563
Total number enrolled -----	154,064	156,769
Total number enrolled in 1877 -----		147,863
Increase -----		8,906
Average number belonging -----	103,006	105,837
Average number belonging in 1877 -----		97,527
Increase -----		8,310
Average daily attendance -----	94,696	98,468
Average daily attendance in 1877 -----		89,539
Increase -----		8,929
Number enrolled in High Schools, or the advanced grade -----	4,418	4,871
Number enrolled in Grammar, or First Grade Schools -----	19,455	20,197
Number enrolled in Intermediate, or Second Grade Schools -----	37,798	38,693
Number enrolled in Primary, or Third Grade Schools -----	91,124	91,788
Percentage of pupils in High Schools -----	2.89	3.13
Percentage of pupils in Grammar, or First Grade Schools -----	12.73	12.98
Percentage of pupils in Intermediate, or Second Grade Schools -----	24.74	24.89
Percentage of pupils in Primary, or Third Grade Schools -----	59.64	59.00

SCHOOL STATISTICS—Continued.

	1878.	1879.
<i>(c.) Length of School Terms.</i>		
Districts maintaining schools less than six months.	30	18
Districts maintaining schools less than six months in 1877.		31
Decrease		13
Districts maintaining schools six months or over, but less than eight months	829	618
Districts maintaining schools six months or over, but less than eight months in 1877		621
Decrease		3
Districts maintaining schools eight months or over	829	914
Districts maintaining schools eight months or over in 1877		1,134
Decrease		220
Average number of months schools were maintained for all the schools of the State	7.21	7.45
Average number of months schools were maintained for all the schools of the State in 1877		7.26
Increase19
Districts not having sufficient funds for an eight months' school	1,136	1,343
Districts not having sufficient funds for an eight months' school in 1877		1,112
Increase		231
<i>(d.) Teachers.</i>		
Number of male teachers	1,192	1,236
Number of male teachers in 1877		1,184
Increase		52
Number of female teachers	2,101	2,217
Number of female teachers in 1877		1,983
Increase		234
Total number of teachers	3,293	3,453
Total number of teachers in 1877		3,167
Increase		276
Number of teachers holding life diplomas	336	476
Number of teachers holding educational diplomas	417	489
Number of teachers holding first grade State certificates	657	690
Number of teachers holding second grade State certificates	299	410
Number of teachers holding third grade State certificates	113	153
Average monthly salary paid to male teachers	\$83 95	\$82 13
Average monthly salary paid to male teachers in 1877		83 78
Decrease		\$1 65
Average monthly salary paid to female teachers	\$68 24	\$66 37
Average monthly salary paid to female teachers in 1877		69 68
Decrease		\$3 31

SCHOOL STATISTICS—Continued.

	1878.	1879.
Districts which have employed the same teacher more than one year	492	564
Districts which employed the same teacher more than one year in 1877		432
Increase		132
Number of teachers who attended County Institutes	1,623	2,426
Number of teachers who subscribe for some educational journal	1,342	1,656
Number of teachers who are graduates of the California State Normal School	300	408
Number of teachers who are graduates of other Normal Schools	190	188
(c.) <i>County Superintendents.</i>		
Number of school visits made by County Superintendents	3,001	4,222
Number of school visits made by County Superintendents in 1877		3,373
Increase		849
Number of schools not visited by County Superintendents	331	177
Number of schools not visited by County Superintendents in 1877		199
Decrease		22
Number of Trustees appointed by County Superintendents	912	966
Number of Trustees appointed by County Superintendents in 1877		1,107
Decrease		141
Number of city and county certificates granted to male teachers	428	251
Number of city and county certificates granted to female teachers	925	744
Number of certificates renewed	507	458
Number of applicants rejected	1,581	1,162
Amount of salaries paid County Superintendents	\$42,100 00	\$43,575 50
Amount of salaries paid County Superintendents in 1877		44,277 00
Decrease		\$701 50
Average annual salary paid County Superintendents	\$809 61	\$838 84
Average annual salary paid County Superintendents in 1877		851 39
Decrease		\$12 55
(f.) <i>Miscellaneous School Statistics.</i>		
Number of new school houses erected	126	122
Number of new school houses erected in 1877		112
Increase		10
Districts having suitable accommodations for all pupils who may wish to attend school	1,510	1,631
Districts not having suitable accommodations for all pupils who may wish to attend school	305	299
Districts whose schools are provided with water-closets	1,551	1,610
Districts whose schools are not provided with water-closets	352	336
Districts having sufficient school grounds	1,732	1,763
Districts not having sufficient school grounds	175	175
Districts whose school grounds are suitably improved	564	832
Districts whose school grounds are not suitably improved	1,133	1,131
Districts whose schools are well ventilated	1,723	1,845
Districts whose schools are not well ventilated	83	96
Districts whose schools are supplied with good furniture	946	977
Districts whose schools are supplied with passable furniture	388	433
Districts whose schools are supplied with poor furniture	531	537
Districts whose schools are well supplied with apparatus	446	590
Districts whose schools are passably supplied with apparatus	629	657
Districts whose schools are poorly supplied with apparatus	756	686

SCHOOL STATISTICS—Continued.

	1878.	1879.
Number of pupils attending schools for colored children	313	137
Number of pupils attending schools for colored children in 1877		325
Decrease		188
Number of school visits made by Trustees	9,931	10,429
Number of school visits made by other persons	68,445	69,811

TEACHERS' INSTITUTES.

	1878.	1879.
Number of Institutes held	36	34
Number of Institutes held in 1877		37
Decrease		3
Number of teachers who attended Institutes	1,623	2,426
Number of teachers who attended Institutes in 1877		1,819
Increase		607
Cost of Institutes	\$2,719 75	\$2,988 22
Cost of Institutes in 1877		2,847 80
Increase		\$140 42

III. FINANCIAL STATISTICS.

	1878.	1879.
<i>(a.) Receipts.</i>		
Balance on hand at the beginning of the school year	\$745,091 88	\$684,932 28
Received from State apportionments	1,576,157 58	1,429,162 18
Received from county apportionments	728,360 05	778,011 32
Received from city and district taxes	664,654 91	668,840 77
Received from miscellaneous sources (sale of bonds, rents, etc.)	106,396 84	92,852 41
Total receipts from all sources	\$3,820,661 26	\$3,653,798 96
Percentage of school funds from State apportionments	41.25	39.10
Percentage of school funds from county apportionments	19.06	21.31
Percentage of school funds from city and district taxes	17.40	18.30
Percentage of school funds from other sources	22.29	21.29
Decrease since 1877 in receipts from State apportionments		\$45,939 23
Decrease since 1877 in receipts from city and county apportionments		39,381 64
Increase in receipts from miscellaneous sources since 1877		\$128,956 48
Increase in receipts from all sources since 1877		43,635 61
Amount of State apportionments per census child	\$7 67	\$6 60
Amount of State apportionments per census child in 1877		7 37
Decrease		77

FINANCIAL STATISTICS—Continued.

	1878.	1879.
Amount of county apportionments per census child	\$3 54	\$3 5
Amount of county apportionments per census child in 1877		3 5
Increase		
Total receipts of all kinds per census child	\$18 59	\$16 8
Total receipts of all kinds per census child in 1877		18 0
Decrease		\$1 20
<i>(b.) Expenditures for school purposes.</i>		
Amount paid for teachers' salaries	\$2,272,551 19	\$2,285,732 39
Amount paid for rents, repairs, fuel, and contingent expenses	426,707 66	371,992 13
Amount paid for school libraries	53,947 85	46,490 50
Amount paid for school apparatus	12,513 65	13,565 73
Total current expenses	\$2,765,720 35	\$2,717,780 75
Amount paid for sites, buildings, and school furniture	390,094 92	293,126 38
Total expenditures of all kinds	\$3,155,815 27	\$3,010,907 13
Percentage of current expenses paid for teachers' salaries	82.14	84.10
Percentage of current expenses paid for contingent expenses, etc.	15.44	13.69
Percentage of current expenses paid for school libraries	1.96	1.71
Percentage of current expenses paid for school apparatus46	.50
Increase since 1877 in amount paid for teachers' salaries		\$136,296 69
Cost of tuition per scholar enrolled in Public Schools during the year	\$14 75	\$14 58
Cost of tuition per scholar in average attendance	20 06	21 58
Cost of tuition per scholar in daily attendance	24 00	23 21
Total cost (current expenses) per scholar enrolled in public schools during the year	17 95	17 34
Total cost (current expenses) per scholar in average attendance	26 85	25 67
Total cost (current expenses) per scholar in daily attendance	29 21	27 60
<i>Expenditures from unappropriated County School Fund.</i>		
Cash drawn for County Institutes	\$2,719 75	\$2,988 22
Cash drawn for County Boards of Examination	11,387 24	8,489 02
Cash drawn for postage, stationery, etc.	4,421 70	3,002 49
Total expenditures from unappropriated County School Fund	\$18,528 69	\$14,479 73
Total expenditures from unappropriated County School Fund in 1877		17,428 69
Decrease		\$2,948 96
<i>Valuation of school property.</i>		
Valuation of sites, school houses, and furniture	\$5,990,276 50	\$6,477,028 00
Valuation of school libraries	242,676 25	258,045 00
Valuation of school apparatus	110,417 10	122,316 00
Total valuation of school property	\$6,343,369 85	\$6,857,389 00
Total valuation of school property in 1877		5,617,916 95
Increase		\$1,239,472 05

STATISTICAL TABLES.

TABLE No. 1.

Census Statistics for the School Years ending June 30th, 1878 and 1879.

COUNTIES.	Number of White Children between Five and Seventeen Years of Age.					
	1878.			1879.		
	Boys.	Girls.	Total.	Boys.	Girls.	Total.
Alameda	6,454	6,465	12,919	7,458	7,440	14,898
Alpine	50	54	104	59	48	107
Almaden	1,367	1,253	2,620	1,387	1,314	2,701
Alameda	1,975	1,879	3,854	2,008	1,859	3,867
Alameda	1,109	1,079	2,188	1,114	1,077	2,191
Alameda	1,396	1,364	2,760	1,361	1,368	2,729
Alameda	1,655	1,627	3,282	1,709	1,732	3,441
Alameda	219	207	426	218	208	426
Alameda	1,165	1,136	2,301	1,162	1,121	2,283
Alameda	1,042	961	2,003	1,086	992	2,078
Alameda	1,852	1,854	3,706	1,952	1,954	3,906
Alameda	207	217	424	178	200	378
Alameda	637	586	1,223	629	602	1,231
Alameda	815	824	1,639	831	832	1,663
Alameda	418	414	832	471	459	930
Alameda	5,231	5,140	10,371	5,418	5,285	10,703
Alameda	1,035	887	1,922	1,144	940	2,084
Alameda	446	412	858	429	425	854
Alameda	1,636	1,588	3,224	1,643	1,590	3,233
Alameda	598	559	1,157	615	604	1,219
Alameda	479	503	982	545	541	1,086
Alameda	133	100	233	208	162	370
Alameda	1,698	1,582	3,280	1,778	1,615	3,393
Alameda	1,574	1,536	3,110	1,615	1,572	3,187
Alameda	2,512	2,491	5,003	2,515	2,466	4,981
Alameda	1,450	1,385	2,835	1,498	1,406	2,904
Alameda	512	480	992	530	487	1,017
Alameda	3,479	3,437	6,916	3,499	3,505	7,004
Alameda	805	743	1,548	796	726	1,522
Alameda	1,178	1,091	2,269	1,186	1,102	2,288
Alameda	804	807	1,611	851	862	1,713
Alameda	27,601	28,061	55,662	30,895	30,888	61,783
Alameda	2,575	2,656	5,231	2,775	2,700	5,475
Alameda	1,371	1,254	2,625	1,401	1,316	2,717
Alameda	1,240	1,176	2,416	1,292	1,137	2,429
Alameda	1,454	1,364	2,818	1,516	1,454	2,970
Alameda	4,809	4,622	9,431	4,767	4,650	9,417
Alameda	1,899	1,776	3,675	1,863	1,764	3,627
Alameda	946	877	1,823	1,059	988	2,047
Alameda	602	574	1,176	643	607	1,250
Alameda	889	918	1,807	902	924	1,826
Alameda	2,335	2,207	4,542	2,415	2,370	4,785
Alameda	3,765	3,682	7,447	3,696	3,636	7,332
Alameda	859	833	1,692	891	819	1,710
Alameda	792	809	1,601	806	811	1,617
Alameda	980	947	1,927	1,079	1,022	2,101
Alameda	347	338	685	340	321	661
Alameda	1,734	1,630	3,364	1,716	1,584	3,300
Alameda	898	891	1,789	858	872	1,730
Alameda	739	696	1,435	755	588	1,443
Alameda	1,505	1,502	3,009	1,479	1,563	3,042
Alameda	1,222	1,204	2,426	1,197	1,215	2,409
Totals	100,672	102,499	203,171	108,235	105,813	214,048

TABLE No. 1—Continued.

Number of Negro Children between Five and Seventeen Years of Age.

COUNTIES.	1878.			1879.		
	Boys.	Girls.	Total.	Boys.	Girls.	Total.
Alameda	48	40	88	54	63	117
Alpine						
Amador	8	17	25	10	14	24
Butte	12	10	22	18	27	45
Calaveras	2		2	2		2
Colusa	13	5	18	10	8	18
Contra Costa	2	5	7	4	6	10
Del Norte						
El Dorado	15	15	30	16	11	27
Fresno	9	3	12	6	3	9
Humboldt	1	4	5	2	4	6
Inyo	1	2	3			
Kern						
Lake	2		2	1		1
Lassen						
Los Angeles	23	19	42	18	14	32
Marin	3	1	4	6		6
Mariposa	6	11	17	6	11	17
Mendocino	5	1	6	4		4
Merced	10	2	12	10	10	20
Modoc	2		2	2		2
Mono		1	1		1	1
Monterey	4	4	8	2		2
Napa	11	11	22	8	7	15
Nevada	24	19	43	21	19	40
Placer	1	3	4	1	2	3
Plumas						
Sacramento	41	47	88	41	58	99
San Benito				1		1
San Bernardino	1	2	3	3	2	5
San Diego	3	8	11	2	9	11
San Francisco	118	115	233	170	147	317
San Joaquin	36	36	72	40	43	83
San Luis Obispo						
San Mateo				2	1	3
Santa Barbara	5	4	9	5	6	11
Santa Clara	25	32	57	34	35	69
Santa Cruz	16	12	28	16	10	26
Shasta	5	4	9	7	4	11
Sierra	4	3	7	4	4	8
Siskiyou	15	10	25	17	7	24
Solano	7	8	15	9	4	13
Sonoma	4	7	11	5	10	15
Stanislaus	1		1	1		1
Sutter	7	2	9	7	3	10
Tehama	20	21	41	14	19	33
Trinity	2	1	3	2		2
Tulare	11	9	20	11	11	22
Tuolumne	6	6	12	10	8	18
Ventura						
Yolo	10	9	19	8	7	15
Yuba	40	36	76	37	37	74
Totals	579	545	1,124	647	625	1,272

TABLE NO. 1—Continued.

COUNTIES.	Number of Indian Children between Five and Seventeen Years of Age.					
	1878.			1879.		
	Boys.	Girls.	Total.	Boys.	Girls.	Total.
Lameda.....	3	6	9	2	3	5
Alpine.....				1		1
Amador.....	8	6	14	5	3	8
Butte.....	59	35	94	48	24	72
Calaveras.....				2	1	3
Colusa.....	7	2	9	6	3	9
Contra Costa.....		3	3	5	7	12
Del Norte.....	20	12	32	13	11	24
El Dorado.....	18	14	32	26	23	49
Fresno.....	29	19	48	29	12	41
Humboldt.....	11	5	16	11	4	15
Inyo.....	3	1	4	2		2
Kern.....				4	3	7
Lake.....	2	4	6	4	1	5
Lassen.....	2	1	3	2	2	4
Los Angeles.....	14	19	33	19	14	33
Marin.....	12	13	25	8	6	14
Mariposa.....	26	15	41	20	19	39
Mendocino.....	123	85	208	76	80	156
Merced.....	2	2	4	3		3
Modoc.....	4		4	4	3	7
Mono.....	1		1			
Monterey.....	2	9	11	5	6	11
Napa.....	3	5	8	3	1	4
Nevada.....	1	2	3		1	1
Placer.....				1		1
Plumas.....	7	3	10	9	5	14
Sacramento.....	3	2	5	3	4	7
San Benito.....						
San Bernardino.....	78	71	149	71	56	127
San Diego.....	30	29	59	13	21	34
San Francisco.....	3	1	4		5	5
San Joaquin.....						1
San Luis Obispo.....						
San Mateo.....						
Santa Barbara.....	7	8	15	11	9	20
Santa Clara.....	6	12	18	1	1	2
Santa Cruz.....	1		1	2		2
Shasta.....	58	56	114	53	59	112
Sierra.....					1	1
Siskiyou.....	33	31	64	21	25	46
Solano.....	3	2	5	4	2	6
Sonoma.....	35	38	73	61	55	116
Stanislaus.....	1		1	2	1	3
Sutter.....	1	1	2	1	5	6
Tehama.....	5	4	9	10	8	18
Trinity.....	8	5	13	10	3	13
Tulare.....	8	4	12	10		10
Tuolumne.....	4	1	5	8	3	11
Ventura.....	3	5	8			
Yolo.....						
Yuba.....	2	3	5	1	3	4
Totals.....	646	534	1,180	591	493	1,084

TABLE NO. 1—Continued.

COUNTIES.	Total Number of Census Children between Five and Seventeen Years of Age.		Number of Children under Five Years of Age in 1878.			
	1878.	1879.	White.	Negro.	Indian.	Total.
Alameda	13,016	15,020	6,050	44	3	6,097
Alpine	104	108	63	—	—	63
Amador	2,659	2,733	1,040	7	1	1,048
Butte	3,970	3,984	1,425	2	17	1,434
Calaveras	2,190	2,196	672	—	—	672
Colusa	2,787	2,756	1,339	1	3	1,343
Contra Costa	3,292	3,463	1,367	—	—	1,367
Del Norte	458	450	179	—	10	189
El Dorado	2,363	2,359	806	12	5	823
Fresno	2,063	2,128	875	8	16	899
Humboldt	3,727	3,927	1,777	3	2	1,782
Inyo	431	380	253	1	—	254
Kern	1,223	1,238	528	—	2	530
Lake	1,647	1,659	761	2	1	764
Lassen	835	934	343	—	—	343
Los Angeles	10,446	10,768	3,942	1	—	3,943
Marin	1,951	2,104	925	2	6	933
Mariposa	916	910	302	3	7	312
Mendocino	3,438	3,393	1,502	7	115	1,624
Merced	1,173	1,242	509	2	—	511
Modoc	988	1,095	427	—	—	427
Mono	235	371	136	—	—	136
Monterey	3,299	3,406	1,391	5	6	1,402
Napa	3,140	3,206	1,220	8	—	1,228
Nevada	5,049	5,022	1,602	10	—	1,702
Placer	2,839	2,908	1,124	1	—	1,125
Plumas	1,002	1,031	440	—	4	444
Sacramento	7,009	7,110	2,832	35	1	2,868
San Benito	1,548	1,523	717	—	—	717
San Bernardino	2,421	2,420	964	2	36	1,002
San Diego	1,681	1,758	741	2	2	745
San Francisco	55,899	62,105	22,789	95	—	22,884
San Joaquin	5,303	5,559	2,117	28	—	2,145
San Luis Obispo	2,625	2,717	1,242	2	—	1,244
San Mateo	2,416	2,432	967	—	—	967
Santa Barbara	2,842	3,001	1,239	5	7	1,251
Santa Clara	9,506	9,488	3,494	28	1	3,523
Santa Cruz	3,704	3,655	1,359	3	—	1,362
Shasta	1,946	2,170	986	3	22	811
Sierra	1,183	1,259	515	—	1	516
Siskiyou	1,896	1,896	675	4	18	697
Solano	4,562	4,804	2,006	6	2	2,014
Sonoma	7,531	7,463	3,034	6	26	3,066
Stanislaus	1,694	1,714	946	4	—	950
Sutter	1,612	1,633	655	3	—	658
Tehama	1,977	2,152	852	17	3	872
Trinity	701	676	292	—	—	292
Tulare	3,396	3,332	1,421	6	7	1,434
Tuolumne	1,806	1,759	485	7	—	492
Ventura	1,443	1,443	742	—	44	786
Yolo	3,026	3,057	1,342	3	—	1,345
Yuba	2,507	2,487	996	15	4	1,015
Totals	205,475	216,404	84,296	393	372	85,061

TABLE No. 1—Continued.

COUNTIES.	Number of Children under Five Years of Age in 1879.			
	White.	Negro.	Indian.	Total.
Alameda	6,800	44	2	6,846
Alpine	64			64
Amador	1,019	11	5	1,035
Butte	1,431	8	13	1,452
Calaveras	721			721
Colusa	1,359	8		1,367
Contra Costa	1,348	3	3	1,354
Del Norte	153		9	162
El Dorado	814	7	13	834
Fresno	983	6	15	1,004
Humboldt	1,870	3	5	1,878
Inyo	197		1	198
Kern	490		3	493
Lake	767		4	771
Lassen	417			417
Los Angeles	3,940	2	2	3,944
Marin	905	3	6	914
Mariposa	340	9	13	362
Mendocino	1,470	5	109	1,584
Merced	485	4		489
Modoc	569		5	574
Mono	245			245
Monterey	1,430	4	6	1,440
Napa	1,246	6		1,252
Nevada	1,731	12		1,743
Placer	1,073	1		1,074
Plumas	476		5	481
Sacramento	2,704	23	1	2,728
San Benito	716			716
San Bernardino	1,015	2	31	1,051
San Diego	613	7	16	636
San Francisco	23,668	110		23,778
San Joaquin	2,221	23		2,244
San Luis Obispo	1,232			1,232
San Mateo	943	3		946
Santa Barbara	1,218	5		1,223
Santa Clara	3,407	9	1	3,417
Santa Cruz	1,357			1,357
Shasta	793	6	31	830
Sierra	548	2		550
Siskiyou	753	1	13	767
Solano	1,981	7	1	1,989
Sonoma	2,969	6	25	3,000
Stanislaus	728			728
Sutter	624	4	3	631
Tehama	839	16	3	858
Trinity	282		2	284
Tulare	1,449	7		1,459
Tuolumne	510	3	1	514
Ventura	691		31	722
Yolo	1,367	1	1	1,369
Yuba	893	13		906
Totals	85,870	384	379	86,633

TABLE No. 1—Continued.

Number of Children between Five and Seventeen Years of Age who have attended Public Schools at any time during the School Year of 1878.

COUNTIES.	White.	Negro.	Indian.	Total.
Alameda	9,149	61	1	9,211
Alpine	83			83
Amador	1,953	16		1,969
Butte	2,718	13	27	2,758
Calaveras	1,627	2		1,629
Colusa	1,999	9		2,008
Contra Costa	2,490	4	2	2,496
Del Norte	358		16	374
El Dorado	1,783	20	21	1,824
Fresno	1,288		4	1,292
Humboldt	2,645	3	9	2,657
Inyo	318	1		319
Kern	747	1		748
Lake	1,341		26	1,367
Lassen	583		1	584
Los Angeles	5,991	21	10	6,022
Marin	1,246		13	1,259
Mariposa	677	16	13	706
Mendocino	2,439	4	89	2,532
Merced	737	6		743
Modoc	723	1	1	725
Mono	176	1		177
Monterey	2,286	4	6	2,296
Napa	2,372	20		2,392
Nevada	3,971	33	1	4,005
Placer	2,277			2,277
Plumas	806		8	814
Sacramento	4,799	65	2	4,866
San Benito	1,059			1,059
San Bernardino	1,530	2	5	1,537
San Diego	1,000	7	9	1,016
San Francisco	32,974	153		33,127
San Joaquin	4,184	52		4,236
San Luis Obispo	1,598			1,598
San Mateo	1,612			1,612
Santa Barbara	1,547	5	7	1,559
Santa Clara	6,061	35		6,096
Santa Cruz	2,533	22		2,555
Shasta	1,423	5	35	1,463
Sierra	995	6		1,001
Siskiyou	1,329	20	16	1,365
Solano	3,225	12		3,237
Sonoma	5,707	8	5	5,720
Stanislaus	1,375			1,375
Sutter	1,316	7		1,323
Tehama	1,390	35	2	1,427
Trinity	473	2		475
Tulare	2,281	12		2,293
Tuolumne	1,442	10	1	1,453
Ventura	801			801
Yolo	2,266	10		2,276
Yuba	1,794	63	3	1,860
Totals	137,497	767	333	138,597

TABLE No. 1—Continued.

COUNTIES.	Number of Children between Five and Seventeen Years of Age who have attended Public Schools at any time during the School Year of 1879.			
	White.	Negro.	Indian.	Total.
Alameda	10,483	95		10,578
Alpine	89			89
Amador	1,976	9		1,985
Butte	2,857	23	20	2,900
Calaveras	1,620	2	2	1,624
Colusa	2,023	5		2,028
Contra Costa	2,646	5	4	2,655
Del Norte	331		9	340
El Dorado	1,787	19	33	1,839
Fresno	1,487	2	12	1,501
Humboldt	2,764	1	8	2,773
Inyo	265		1	266
Kern	783			783
Lake	1,364	1	3	1,368
Lassen	705		2	707
Los Angeles	6,129	12	3	6,144
Marin	1,340	3	3	1,346
Mariposa	616	15	6	637
Mendocino	2,497	4	59	2,560
Merced	842	9		851
Modoc	863			863
Mono	263	1		264
Monterey	2,387	1	1	2,389
Napa	2,426	7		2,433
Nevada	3,929	28		3,957
Placer	2,163	1		2,164
Plumas	779		10	789
Sacramento	4,789	72	1	4,862
San Benito	1,044			1,044
San Bernardino	1,599	3	8	1,610
San Diego	1,076	1		1,077
San Francisco	35,328	164		35,492
San Joaquin	4,147	57		4,204
San Luis Obispo	1,729			1,729
San Mateo	1,668			1,668
Santa Barbara	1,738	3	1	1,742
Santa Clara	5,938	40		5,978
Santa Cruz	2,627			2,627
Shasta	1,557	9	36	1,602
Sierra	1,029	6		1,035
Siskiyou	1,356	16	21	1,393
Solano	3,418	10		3,428
Sonoma	5,668	10	1	5,679
Stanislaus	1,359			1,359
Sutter	1,305	10	1	1,316
Tehama	1,359	18	5	1,373
Trinity	485	1		486
Tulare	2,532	17		2,549
Tuolumne	1,345	12		1,357
Ventura	902		2	904
Yolo	2,330	7		2,337
Yuba	1,779	59	4	1,842
Totals	143,892	658	256	144,806

TABLE No. 1—Continued.

COUNTIES.	Number of Children between Five and Seventeen Years of Age who have attended only Private Schools at any time during the School Year of 1878.			
	White.	Negro.	Indian.	Total.
Alameda	987			987
Alpine				
Amador	48			48
Butte	219		20	239
Calaveras	15			15
Colusa	213			213
Contra Costa	140			140
Del Norte	5			5
El Dorado	76			76
Fresno	70			70
Humboldt	161	1		162
Inyo	3			3
Kern	19			19
Lake	19			19
Lassen	10			10
Los Angeles	582	3		585
Marin	296		4	300
Mariposa	9			9
Mendocino	53			53
Merced	4			4
Modoc	7			7
Mono	10			10
Monterey	55	1		56
Napa	248			248
Nevada	192			192
Placer	49			49
Plumas	25			25
Sacramento	873			873
San Benito	104			104
San Bernardino	101	4		105
San Diego	61			61
San Francisco	6,543	6		6,549
San Joaquin	169			169
San Luis Obispo	99			99
San Mateo	237			237
Santa Barbara	304			304
Santa Clara	1,284	2	1	1,287
Santa Cruz	247			247
Shasta	19		3	22
Sierra	8			8
Siskiyou	99		17	116
Solano	514		1	515
Sonoma	421	2	2	425
Stanislaus	21			21
Sutter	26			26
Tehama	71			71
Trinity	32			32
Tulare	74			74
Tuolumne	36			36
Ventura	76			76
Yolo	92			92
Yuba	216	1		217
Totals	15,242	20	48	15,310

TABLE NO. 1—Continued.

COUNTIES.	Number of Children between Five and Seventeen Years of Age who have attended only Private Schools at any time during the School Year of 1879.			
	White.	Negro.	Indian.	Total.
Alameda	1,119			1,119
Alpine	3			3
Amador	79	3		82
Butte	175	20		195
Calaveras	13			13
Colusa	121			121
Contra Costa	122	3		125
Del Norte	4			4
El Dorado	105	3	2	110
Fresno	13			13
Humboldt	160	4		164
Inyo	6			6
Kern	32			32
Lake	20			20
Lassen				
Los Angeles	573	3		576
Marin	339	6	2	347
Mariposa	11			11
Mendocino	41			41
Merced	15			15
Modoc	15	1		16
Mono	15			15
Monterey	59			59
Napa	198		3	201
Nevada	174			174
Placer	5			5
Plumas	31			31
Sacramento	625	2		627
San Benito	102			102
San Bernardino	84		1	85
San Diego	57			57
San Francisco	7,205	14	5	7,224
San Joaquin	212			212
San Luis Obispo	87			87
San Mateo	217			217
Santa Barbara	311		3	314
Santa Clara	1,204	2		1,206
Santa Cruz	116			116
Shasta	71	1		72
Sierra	41			41
Siskiyou	103			103
Solano	472		1	473
Sonoma	321	1	2	324
Stanislaus	22			22
Sutter	4			4
Tehama	115			115
Trinity	30			30
Tulare	59			59
Tuolumne	40			40
Ventura	54			54
Yolo	94			94
Yuba	256			256
Totals	15,350	63	19	15,432

TABLE No. 1—Continued.

COUNTIES.	Number of Children between Five and Seventeen Years of Age who have not attended School at any time during the School Year of 1878.			
	White.	Negro.	Indian.	Total.
Alameda	2,790	25	3	2,818
Alpine	21			21
Amador	619	9	14	642
Butte	927	9	37	973
Calaveras	546			546
Colusa	553	4	9	566
Contra Costa	652	3	1	654
Del Norte	63			63
El Dorado	441	9	13	463
Fresno	645	12	44	701
Humboldt	900	1	7	908
Inyo	103	2	4	109
Kern	341	1		342
Lake	251	5	3	259
Lassen	240		1	241
Los Angeles	3,798	18	23	3,839
Marin	380	4	8	392
Mariposa	172	1	28	201
Mendocino	732	2	119	853
Merced	426			426
Modoc	242			242
Mono	52		1	53
Monterey	924	4	14	942
Napa	498	2		500
Nevada	844	6	2	852
Placer	509	4		513
Plumas	163			163
Sacramento	1,247	21	2	1,270
San Benito	385			385
San Bernardino	101	4		105
San Diego	558	4	44	606
San Francisco	16,147	72		16,219
San Joaquin	877	21		898
San Luis Obispo	928			928
San Mateo	567			567
Santa Barbara	968	4	7	979
Santa Clara	2,097	19	7	2,123
Santa Cruz	895	6	1	902
Shasta	385	4	72	461
Sierra	173	1		174
Siskiyou	379	5	31	415
Solano	802	3	4	810
Sonoma	1,319	1	66	1,386
Stanislaus	296	1	1	298
Sutter	259	2	2	263
Tehama	466	6	7	479
Trinity	181	1	10	192
Tulare	945	4	11	960
Tuolumne	315	2		317
Ventura	557		8	565
Yolo	649	9		658
Yuba	416	12	2	430
Totals	49,745	323	606	50,674

TABLE NO. 1—Continued.

COUNTIES.	Number of Children between Five and Seventeen Years of Age who have not attended School at any time during the School Year of 1879.			
	White.	Negro.	Indian.	Total.
Alameda	3,296	22	5	3,323
Alpine	15	—	1	16
Amador	619	12	3	634
Butte	839	22	28	889
Calaveras	558	—	1	559
Colusa	593	8	6	607
Contra Costa	673	1	9	683
Del Norte	91	—	15	106
El Dorado	392	5	13	410
Fresno	578	7	29	614
Humboldt	982	1	7	990
Inyo	107	—	1	108
Kern	413	—	—	413
Lake	272	—	—	272
Lassen	226	—	1	227
Los Angeles	4,001	17	30	4,048
Marin	405	1	6	411
Mariposa	227	2	33	262
Mendocino	695	97	11	803
Merced	362	4	3	369
Modoc	208	1	7	216
Mono	92	—	—	92
Monterey	947	1	10	958
Napa	561	8	1	570
Nevada	879	12	—	891
Placer	736	2	1	739
Plumas	211	—	4	215
Sacramento	1,600	19	5	1,624
San Benito	376	1	—	377
San Bernardino	607	1	117	725
San Diego	598	7	19	624
San Francisco	19,250	139	—	19,389
San Joaquin	1,116	26	1	1,143
San Luis Obispo	901	—	—	901
San Mateo	544	3	—	547
Santa Barbara	927	5	13	945
Santa Clara	2,288	16	—	2,304
Santa Cruz	834	26	2	862
Shasta	423	3	70	496
Sierra	180	2	1	183
Siskiyou	372	7	21	400
Solano	895	3	5	903
Sonoma	1,343	4	113	1,460
Stanislaus	328	2	3	333
Sutter	306	—	6	312
Tehama	637	15	12	664
Trinity	146	1	13	160
Tulare	710	5	9	724
Tuolumne	345	6	11	362
Ventura	433	—	58	491
Yolo	618	8	—	626
Yuba	382	6	1	389
Totals	55,186	528	655	56,369

TABLE No. 1—Continued.

COUNTIES.	Number of Mongolian Children under Seven- teen Years of Age.		Number of Mongolian Children between Five and Seventeen Years of Age, attending School.	
	1878.	1879.	1878.	1879.
Alameda	426	349	62	43
Alpine				
Amador	9	9		
Butte	67	47	48	2
Calaveras	9	3		2
Colusa	74	31		
Contra Costa	26	1		
Del Norte				
El Dorado	30	31	3	3
Fresno	7	6		
Humboldt	6	2		
Inyo	5	1	1	
Kern	5	2	1	
Lake	1			
Lassen				
Los Angeles	12	20	1	
Marin	6	24	1	
Mariposa	10	12		2
Mendocino	9			
Merced	15	1		3
Modoc				
Mono				
Monterey	20	32		2
Napa	39	11	2	
Nevada	40	9		
Placer	15	13		
Plumas	8	6	3	
Sacramento	40	67	1	2
San Benito				
San Bernardino		1		
San Diego	16	11	1	
San Francisco	1,505	2,221	161	622
San Joaquin	73	34	13	13
San Luis Obispo				
San Mateo	19			
Santa Barbara	13	6		5
Santa Clara	192	36	33	9
Santa Cruz		1		
Shasta		3		2
Sierra	8	10	1	
Siskiyou	11	1	1	
Solano	24	27		18
Sonoma	9	9		
Stanislaus	5	13		
Sutter	1		1	
Tehama	44			
Trinity	15	14		1
Tulare	2	2		
Tuolumne	5	11		3
Ventura	5	10		
Yolo	10	5		
Yuba	13	15	5	
Totals	2,449	3,107	339	732

TABLE No. 1—Continued.

COUNTIES.	Number of Deaf and Dumb Children between Five and Twenty-one Years of Age.		Number of Blind Children between Five and Twenty-one Years of Age.	
	1878.	1879.	1878.	1879.
Alameda	10	8	3	3
Alpine				
Amador				
Butte	1	1		1
Calaveras				
Colusa				
Contra Costa				
Del Norte			1	
El Dorado	3			1
Fresno			1	
Humboldt	1	1		
Inyo				
Kern				
Lake				1
Lassen				
Los Angeles	1	1	3	
Marin	1			
Mariposa	1	1		
Mendocino	1		1	1
Merced				
Modoc				
Mono				
Monterey	1	5		1
Napa		4		
Nevada	1		1	
Placer		1	1	1
Plumas	1			
Sacramento	2	1	1	
San Benito				
San Bernardino			1	1
San Diego				
San Francisco	21	28	8	12
San Joaquin		4		
San Luis Obispo				
San Mateo				
Santa Barbara	2	5	1	
Santa Clara	3	4	1	2
Santa Cruz	1			
Shasta				1
Sierra	1	1		
Siskiyou				
Solano	2	2	2	1
Sonoma	2	2	1	1
Stanislaus	1			
Sutter	1			
Tehama	1	1		
Trinity				
Tulare	1	1		
Tuolumne		1		
Ventura			1	
Yolo	4	3		
Yuba	1			
Totals	64	126	27	27

TABLE No. 1—Continued.

COUNTIES.	Nativity of Children—1878.			
	Native Born, Native Par- ents.	Native Born, one Parent Foreign.	Native Born, both Parents Foreign.	Foreign Born.
Alameda	8,050	2,043	8,537	492
Alpine	90	42	30	5
Amador	1,829	498	1,315	74
Butte	3,727	548	1,078	55
Calaveras	1,181	399	1,268	23
Colusa	3,405	279	380	140
Contra Costa	1,957	505	2,090	133
Del Norte	441	100	91	15
El Dorado	1,587	608	1,004	20
Fresno	2,034	366	482	87
Humboldt	3,339	649	1,311	210
Inyo	416	75	198	-----
Kern	1,024	152	172	9
Lake	1,960	178	249	23
Lassen	964	118	89	7
Los Angeles	10,926	939	2,336	158
Marin	1,040	336	410	98
Mariposa	651	147	427	9
Mendocino	3,818	407	730	117
Merced	1,125	169	371	34
Modoc	579	41	34	5
Mono*	-----	-----	-----	-----
Monterey	2,955	634	1,022	90
Napa	2,549	494	1,237	129
Nevada	2,237	1,040	3,286	228
Placer	1,946	548	1,414	71
Plumas	911	164	331	49
Sacramento	4,382	1,473	3,737	285
San Benito	1,455	328	451	31
San Bernardino	2,640	264	379	39
San Diego	1,750	260	387	29
San Francisco	15,494	9,359	51,917	3,518
San Joaquin	4,377	784	2,206	154
San Luis Obispo	2,681	556	544	88
San Mateo	1,105	468	1,708	121
Santa Barbara	3,184	527	352	40
Santa Clara	6,693	1,562	4,467	307
Santa Cruz	2,878	615	1,507	67
Shasta	2,278	168	300	10
Sierra	681	215	714	93
Siskiyou	1,552	366	667	18
Solano	2,916	840	2,654	191
Sonoma*	-----	-----	-----	-----
Stanislaus	1,696	264	464	20
Sutter	1,652	221	364	38
Tehama*	-----	-----	-----	-----
Trinity	541	128	321	18
Tulare	4,330	357	293	50
Tuolumne	755	337	1,168	40
Ventura	1,629	309	255	37
Yolo	3,064	358	861	88
Yuba	1,762	553	1,186	35
Totals	130,236	31,791	106,794	7,598

* Not reported.

TABLE No. 1—Continued.

COUNTIES.	Nativity of Children—1879.			
	Native Born, Native Par- ents.	Native Born, one Parent Foreign.	Native Born, both Parents Foreign.	Foreign Born.
Alameda	8,829	2,467	9,767	807
Alpine	81	33	48	10
Amador	1,811	529	1,338	99
Butte	3,867	571	896	101
Calaveras	1,265	471	1,165	21
Colusa	3,728	312	471	93
Contra Costa	1,954	1,934	2,234	99
Del Norte	401	103	103	5
El Dorado	1,602	605	992	26
Fresno	2,248	346	440	104
Humboldt	3,455	765	1,393	195
Inyo	399	62	114	4
Kern	1,121	180	160	3
Lake	1,929	207	261	29
Lassen	1,022	204	129	—
Los Angeles	10,583	1,274	2,662	193
Marin	969	329	1,628	92
Mariposa	564	222	481	5
Mendocino	3,745	411	744	90
Mereed	1,204	117	394	17
Modoc	1,157	92	91	25
Mono *	—	—	—	—
Monterey	3,060	503	1,128	43
Napa	2,363	593	1,306	211
Nevada	2,339	1,099	3,186	141
Placer	1,888	608	1,427	69
Plumas	962	171	345	41
Sacramento	4,453	1,186	4,161	108
San Benito	1,457	273	477	32
San Bernardino	2,474	441	512	41
San Diego	1,561	362	415	56
San Francisco	18,889	10,397	55,882	2,936
San Joaquin	4,655	1,006	2,038	104
San Luis Obispo	2,648	598	614	89
San Mateo	1,190	423	1,694	71
Santa Barbara	3,219	587	381	48
Santa Clara	6,070	1,927	4,660	315
Santa Cruz	2,844	651	1,454	64
Shasta	2,106	163	291	14
Sierra	807	252	711	59
Siskiyou	1,636	377	645	6
Solano	3,065	991	2,649	115
Sonoma *	—	—	—	—
Stanislaus *	—	—	—	—
Sutter	1,685	181	361	35
Tehama	2,658	161	189	—
Trinity	535	114	317	9
Tulare	4,137	302	326	23
Tuolumne	800	309	1,135	29
Ventura	1,642	257	224	42
Yolo	3,029	271	1,025	79
Yuba	1,754	389	1,245	30
Totals	135,860	37,332	114,309	6,828

* Not reported.

TABLE No. 2.

School Statistics.

COUNTIES.	Whole Number of Boys Enrolled.		Whole Number of Girls Enrolled.		Total Number Enrolled.	
	1878.	1879.	1878.	1879.	1878.	1879.
Alameda	4,921	5,511	4,711	5,400	9,635	10,911
Alpine	37	49	44	43	81	92
Amador	1,076	1,118	955	1,011	2,031	2,129
Butte	1,645	1,687	1,478	1,558	3,123	3,245
Calaveras	832	823	818	840	1,650	1,663
Colusa	1,131	1,155	971	1,146	2,102	2,301
Contra Costa	1,313	1,409	1,264	1,372	2,577	2,781
Del Norte	197	193	176	172	373	365
El Dorado	951	992	926	944	1,877	1,936
Fresno	725	829	653	729	1,378	1,558
Humboldt	1,542	1,619	1,442	1,480	2,984	3,099
Inyo	214	160	190	169	404	329
Kern	452	438	488	403	940	841
Lake	719	735	742	729	1,461	1,464
Lassen	310	393	307	379	617	772
Los Angeles	3,487	3,594	3,001	3,221	6,488	6,815
Marin	677	661	618	603	1,295	1,264
Mariposa	417	363	358	311	775	674
Mendocino	1,431	1,482	1,388	1,344	2,819	2,826
Merced	481	462	475	450	956	912
Modoc	356	423	320	421	676	844
Mono	82	122	50	81	132	203
Monterey	1,232	1,252	1,139	1,166	2,371	2,418
Napa	1,311	1,326	1,200	1,248	2,511	2,574
Nevada	2,056	2,093	2,005	2,005	4,061	4,098
Placer	1,248	1,116	1,153	1,086	2,401	2,202
Plumas	478	463	429	420	907	883
Sacramento	2,887	2,813	2,850	2,881	5,737	5,694
San Benito	648	650	539	534	1,187	1,184
San Bernardino	880	965	800	851	1,680	1,816
San Diego	549	522	539	530	1,088	1,052
San Francisco	20,584	19,926	18,088	18,203	38,672	38,129
San Joaquin	2,507	2,450	2,523	2,431	5,030	4,881
San Luis Obispo	913	900	834	810	1,747	1,710
San Mateo	926	991	846	854	1,772	1,845
Santa Barbara	1,041	1,032	814	923	1,855	1,955
Santa Clara	3,657	3,551	3,053	3,169	6,710	6,720
Santa Cruz	1,604	1,592	1,358	1,393	2,962	2,985
Shasta	744	890	682	796	1,426	1,686
Sierra	553	590	534	554	1,087	1,144
Siskiyou	714	725	717	755	1,431	1,480
Solano	2,142	2,098	1,668	1,746	3,810	3,844
Sonoma	3,323	3,311	3,128	3,080	6,451	6,391
Stanislaus	724	838	852	792	1,576	1,630
Sutter	740	705	720	713	1,460	1,418
Tehama	805	784	739	767	1,544	1,551
Trinity	239	249	242	230	481	479
Tulare	1,443	1,622	1,332	1,454	2,775	3,076
Tuolumne	726	678	699	682	1,425	1,360
Ventura	493	522	423	463	916	985
Yolo	1,272	1,198	1,242	1,234	2,514	2,432
Yuba	1,113	1,136	990	987	2,103	2,123
Totals	80,551	81,206	73,513	75,563	154,064	156,769

TABLE No. 2—Continued.

COUNTIES.	Average Number Belonging.		Average Daily Attendance.		Percentage of Attendance on Average Number Belonging.	
	1878.	1879.	1878.	1879.	1878.	1879.
Alameda	7,363	8,328	6,936	7,743	.94	.93
Alpine	50	57	43	45	.86	.79
Amador	1,361	1,481	1,191	1,342	.87	.90
Butte	2,106	2,042	1,890	1,841	.89	.87
Calaveras	1,170	1,203	1,035	1,050	.87	.88
Colusa	1,352	1,429	1,183	1,301	.88	.91
Contra Costa	1,825	1,831	1,583	1,638	.86	.89
Del Norte	267	239	236	208	.88	.87
El Dorado	1,380	1,343	1,169	1,206	.85	.90
Fresno	897	992	788	783	.88	.79
Humboldt	1,854	1,947	1,684	1,768	.90	.91
Inyo	248	212	221	195	.89	.92
Kern	628	564	538	511	.86	.90
Lake	861	991	774	847	.90	.85
Lassen	370	491	326	439	.88	.89
Los Angeles	3,700	4,015	3,331	3,664	.90	.91
Marin	894	972	817	868	.91	.89
Mariposa	557	492	483	446	.87	.91
Mendocino	1,728	1,739	1,574	1,583	.91	.91
Merced	604	604	546	541	.90	.89
Modoc	456	551	390	482	.85	.87
Mono	80	144	70	115	.87	.80
Monterey	1,481	1,608	1,325	1,439	.89	.89
Napa	1,582	1,615	1,414	1,527	.89	.94
Nevada	2,972	2,980	2,680	2,708	.90	.91
Placer	1,698	1,610	1,424	1,417	.84	.88
Plumas	598	544	539	485	.90	.89
Sacramento	3,807	4,175	3,399	3,853	.89	.92
San Benito	677	711	611	640	.90	.90
San Bernardino	1,038	1,088	916	978	.88	.89
San Diego	699	700	640	646	.91	.92
San Francisco	26,932	28,427	26,291	27,075	.97	.95
San Joaquin	3,310	3,168	2,976	2,873	.90	.90
San Luis Obispo	1,055	1,140	971	1,066	.92	.93
San Mateo	1,152	1,173	1,045	1,058	.91	.90
Santa Barbara	1,080	821	969	727	.90	.89
Santa Clara	4,128	4,339	3,853	4,008	.93	.92
Santa Cruz	1,889	2,063	1,718	1,897	.91	.90
Shasta	944	1,084	844	991	.89	.91
Sierra	708	712	631	632	.89	.89
Siskiyou	1,051	1,080	939	968	.89	.89
Solano	2,603	2,594	2,356	2,385	.90	.92
Sonoma	4,048	4,107	3,718	3,796	.92	.92
Stanislaus	961	988	875	880	.91	.89
Sutter	969	977	851	874	.88	.89
Tehama	847	944	732	850	.86	.90
Trinity	374	370	349	347	.94	.94
Tulare	1,959	1,801	1,633	1,612	.84	.89
Tuolumne	1,049	1,013	941	913	.90	.90
Ventura	579	587	530	545	.91	.93
Yolo	1,625	1,646	1,456	1,453	.90	.88
Yuba	1,440	1,405	1,262	1,209	.88	.86
Totals	103,006	105,837	94,696	98,468	.92	.93

TABLE NO. 2—Continued.

Classification of Public School Pupils—1878.

COUNTIES.	High School.	First Grade.		Second Grade.		Third Grade.			Total.	
		First Division.	Second Division.	First Division.	Second Division.	First Division.	Second Division.	Third Division.		
										Fourth Division.
Alameda	404	391	604	783	853	1,027	1,429	1,621	2,520	9,635
Alpine	---	4	6	9	3	20	11	10	16	81
Amador	69	123	154	239	256	322	300	265	303	2,03
Butte	82	193	270	444	504	448	401	456	228	3,126
Calaveras	53	107	155	280	286	242	194	164	169	1,650
Colusa	23	111	150	290	329	370	288	280	261	2,102
Contra Costa	55	161	294	348	356	388	341	334	300	2,577
Del Norte	13	9	32	45	51	43	37	52	39	341
El Dorado	39	123	222	264	260	301	226	211	229	1,877
Fresno	32	97	130	176	197	182	184	190	170	1,358
Itumboldt	105	206	236	323	428	473	464	414	335	2,984
Inyo	---	26	50	64	61	40	65	41	53	406
Kern	4	20	26	143	96	70	108	72	50	589
Lake	24	85	130	172	252	232	226	193	147	1,461
Lassen*	---	---	---	---	---	---	---	---	---	---
Los Angeles	175	342	598	671	851	898	946	921	1,078	6,480
Marin	36	63	105	143	168	193	196	180	202	1,286
Mariposa	19	53	59	115	103	116	123	105	70	765
Mendocino	60	190	268	402	428	410	393	323	345	2,819
Merced	59	84	74	147	157	133	127	115	61	957
Modoc	9	34	77	86	153	63	92	56	100	670
Mono	---	4	22	20	9	9	8	2	7	81
Monterey	51	115	149	262	296	385	342	358	413	2,371
Napa	53	206	256	262	293	398	339	314	390	2,511
Nevada	208	270	365	535	644	536	568	491	445	4,062
Placer	36	185	235	361	301	322	344	283	334	2,401
Plumas	24	45	82	174	174	113	114	107	74	907
San Bernardino	112	255	473	538	828	896	704	776	1,155	5,737
San Benito	41	78	146	147	182	178	135	165	115	1,187
San Bernardino	---	63	137	210	244	238	250	244	294	1,680

San Diego	31	47	102	129	167	129	128	140	184	1,094
San Francisco	1,219	946	2,092	3,238	4,385	5,776	6,400	6,970	7,646	38,672
San Joaquin	257	293	483	662	721	729	660	638	587	5,030
San Luis Obispo	20	96	132	243	273	216	242	218	172	1,612
San Mateo	35	77	134	229	278	293	287	218	221	1,772
Santa Barbara	56	120	148	170	211	312	305	216	317	1,855
Santa Clara	150	321	385	578	785	877	1,019	1,050	1,545	6,710
Santa Cruz	170	151	212	326	430	439	428	384	422	2,962
Shasta	59	111	131	218	234	200	184	143	146	1,426
Sierra	18	42	71	132	158	138	207	151	170	1,087
Siskiyou		157	158	258	190	168	198	146	156	1,431
Solano	144	221	412	409	553	585	450	477	559	3,810
Sonoma	172	372	561	909	1,013	924	930	770	800	6,451
Stanislaus	25	124	165	238	260	245	205	192	124	1,576
Sutter	33	90	161	199	254	245	168	147	163	1,460
Tehama		67	89	276	296	242	260	212	102	1,544
Trinity	14	53	24	68	79	85	57	63	38	481
Tulare	106	200	227	403	457	413	412	281	276	2,775
Tuolumne	29	118	104	231	231	172	237	150	151	1,425
Ventura		56	67	133	134	150	151	128	97	916
Yolo	42	173	309	316	348	386	338	309	293	2,514
Yuba	52	98	187	285	269	343	289	284	296	2,103
Totals	4,418	7,578	11,877	17,305	20,493	22,413	22,510	22,033	21,468	152,795

* Not reported.

San Diego	28	54	89	92	169	193	130	139	165	1,922
San Francisco	1,251	1,098	1,874	2,778	4,464	5,507	5,982	6,850	8,325	38,129
San Joaquin	235	261	399	536	629	678	715	682	746	4,881
San Luis Obispo	33	82	140	211	262	237	256	230	259	1,710
San Mateo	30	84	166	255	292	288	242	275	295	1,838
Santa Barbara	64	111	164	232	224	276	275	212	397	1,955
Santa Clara	231	327	531	594	788	859	1,034	1,240	1,116	6,720
Santa Cruz	175	122	209	282	462	451	462	454	385	2,985
Shasta	38	147	171	268	279	239	203	174	169	1,688
Sierra	---	32	85	154	170	211	161	150	181	1,144
Siskiyou	13	120	171	216	181	217	235	166	158	1,480
Solano	122	303	342	430	574	519	411	541	608	3,850
Sonoma	225	351	506	766	854	1,062	922	820	886	6,392
Stanislaus	15	119	147	250	324	281	178	184	132	1,630
Sutter	42	109	160	250	213	251	173	159	94	1,418
Tehama	27	67	142	229	275	232	199	234	136	1,551
Trinity	27	36	19	87	94	65	50	72	39	489
Tulare	107	128	242	391	555	553	433	349	359	3,077
Tuolumne	47	99	139	205	237	221	147	128	137	1,360
Ventura	1	67	84	123	150	90	146	148	176	985
Yolo	68	137	219	249	435	357	344	315	308	2,432
Yuba	45	99	257	239	315	283	227	245	356	2,066
Totals	4,871	8,098	12,099	17,000	21,693	21,909	22,305	22,569	25,005	155,549

TABLE No. 2—Continued.

COUNTIES.	Total Number of School Districts.		Number of New Districts Organized.		Number of First Grade Schools.		Number of Second Grade Schools.		Number of Third Grade Schools.	
	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.
Alameda	44	45	---	1	59	38	40	63	75	106
Alpine	5	5	---	---	---	---	---	1	5	4
Anador	33	33	---	---	16	17	12	13	5	3
Butte	62	67	5	1	24	42	15	35	13	7
Calaveras	36	37	1	1	21	23	14	23	4	5
Colusa	54	57	2	3	39	28	13	25	8	9
Contra Costa	35	36	---	1	30	31	14	15	10	12
Del Norte	9	9	1	---	3	1	4	6	2	2
El Dorado	41	42	1	1	33	29	6	11	6	2
Fresno	50	53	8	3	22	20	20	27	14	6
Humboldt	48	54	5	7	30	30	19	22	13	11
Inyo	10	10	---	---	8	8	1	1	1	1
Kern	19	20	1	1	4	3	10	9	2	9
Lake	31	32	3	1	18	20	10	12	8	6
Lassen	17	18	3	1	1	1	17	4	---	13
Los Angeles	61	70	5	10	48	51	37	40	25	32
Marin	29	30	---	1	12	12	15	13	8	11
Mariposa	22	23	1	1	9	13	11	9	2	1
Mendocino	58	57	1	1	26	24	30	30	9	11
Merced	27	29	2	2	13	12	15	17	2	2
Modoc	21	23	1	2	5	5	11	10	4	7
Mono	6	6	2	---	4	5	2	1	2	1
Monterey	43	46	4	3	10	10	14	13	18	23
Napa	47	48	1	1	23	25	22	3	26	14
Nevada	44	44	---	---	28	27	31	33	14	14
Placer	48	47	3	---	29	33	14	18	14	16
Plumas	26	27	1	1	15	14	7	11	5	3
Sacramento	65	62	3	1	59	55	45	51	25	32
San Benito	25	26	4	1	11	10	8	16	2	4
San Bernardino	29	33	5	4	11	8	17	16	6	14
San Diego	38	38	5	---	9	5	23	21	8	16
San Francisco	12	12	---	---	13	13	17	17	31	31
San Joaquin	76	78	---	2	33	47	48	43	26	19

San Luis Obispo	38	41	2	3	3	14	27	23	15	12
San Mateo	27	26	---	---	17	15	14	19	9	6
Santa Barbara	24	30	6	6	18	16	11	19	8	7
Santa Clara	57	58	---	1	39	49	41	25	52	55
Santa Cruz	35	37	---	2	14	13	19	23	30	29
Shasta	39	43	8	4	18	18	18	26	3	3
Sierra	24	27	---	3	12	8	8	12	6	9
Siskiyou	36	39	---	3	14	12	20	18	10	16
Solano	47	48	1	1	26	26	38	36	17	20
Sonoma	103	103	6	---	37	27	57	57	7	19
Stanislaus	46	45	1	1	22	21	17	22	5	1
Sutter	38	38	1	---	24	20	16	19	1	2
Tehama	36	36	4	---	5	9	23	28	13	5
Trinity	14	14	1	---	3	4	7	10	6	2
Tulare	73	72	7	---	26	23	31	37	16	9
Tuolumne	27	26	1	---	10	12	12	13	2	1
Ventura	17	19	2	2	11	12	7	7	4	5
Yolo	46	46	1	---	20	17	27	32	10	12
Yuba	33	34	---	1	18	17	17	17	12	12
Totals	1,929	1,999	111	78	1,003	999	972	1,081	619	663

TABLE No. 2.—Continued.

COUNTIES.	Total Number of Schools.		Number of New School Houses Erected.		Districts Having Sui- table Accommodations for all Pupils who may wish to Attend School.		Districts not Having Sui- table Accommodations for all Pupils who may wish to Attend School.	
	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.
Alameda	174	207	3	4	34	31	9	14
Alpine	5	5	1	1	5	4	---	1
Amador	33	33	---	---	22	28	9	5
Butte	52	84	4	3	51	55	8	11
Calaveras	39	40	2	3	33	33	2	3
Colusa	60	62	5	4	35	42	17	11
Contra Costa	54	58	---	---	28	30	7	6
Del Norte	9	9	1	1	9	7	---	2
El Dorado	45	42	---	---	39	42	2	---
Fresno	56	53	31	7	43	51	1	2
Humboldt	62	63	4	5	32	41	16	8
Inyo	10	10	---	---	8	8	2	2
Kern	16	21	1	---	17	16	1	3
Lake	36	38	2	1	20	21	11	11
Lassen	18	4	---	---	10	14	5	4
Los Angeles	165	123	1	8	47	31	8	29
Marin	35	36	---	---	23	26	6	4
Mariposa	22	23	1	---	22	22	---	1
Mendocino	65	65	6	3	38	48	19	9
Merced	30	31	---	---	25	25	---	2
Modoc	20	23	---	---	9	11	11	12
Mono	6	6	---	---	2	2	---	1
Monterey	42	46	5	4	4	5	2	1
Napa	71	42	---	---	35	29	5	16
Nevada	73	74	2	2	44	30	2	18
Placer	57	57	3	1	39	44	5	---
Plumas	27	28	1	2	48	48	---	---
Sacramento	129	138	7	1	18	24	7	2
San Benito	21	30	6	2	109	61	---	1
San Bernardino	34	38	3	4	18	20	3	3
San Diego	40	42	2	6	18	25	10	8
					11	29	25	7

San Francisco	61	61	5	4	12	12	2	2
San Joaquin	107	109	1	3	70	72	17	20
San Luis Obispo	45	49		5	21	21		
San Mateo	40	40			27	26		
Santa Barbara	38	42	2	4	21	21	3	6
Santa Clara	132	129	2	4	52	55	5	2
Santa Cruz	53	65		2	28	28	7	8
Shasta	39	47	7	5	27	26	8	16
Sierra	26	29			21	23	3	3
Siskiyou	44	46	2	2	31	37	6	2
Solano	81	82	4	2	45	36	2	1
Sonoma	101	103	3	7	94	102	7	1
Stanislaus	44	44	1	2	44	44		
Sutter	41	41	2	1	31	37	6	1
Tehama	41	42	8	2	26	26	8	9
Trinity	16	16		1	12	13	1	1
Tulare	73	69		2	48	46	19	25
Tuolumne	24	26			23	23	4	3
Ventura	22	24	1	2	12	15	4	2
Yolo	57	61		1	35	34	10	12
Yuba	47	46	1		33	31		3
Totals	2,578	2,743	126	122	1,510	1,631	305	299

TABLE No. 2—Continued.

COUNTIES.	Districts whose Schools are Provided with Water-closets.		Districts whose Schools are not Provided with Water-closets.		Districts whose Schools have Sufficient Grounds.		Districts whose School Grounds are Sufficiently Improved.		Districts whose School Grounds are not Sufficiently Improved.	
	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.
Alameda.....	40	41	3	4	40	38	3	7	16	24
Alpine.....	5	3	---	2	4	5	1	---	---	---
Anador.....	24	22	7	11	28	21	3	2	6	---
Butte.....	48	49	17	17	62	64	---	2	28	18
Calaveras.....	33	30	2	6	32	31	3	5	4	15
Colusa.....	42	45	10	8	39	50	13	3	1	50
Contra Costa.....	34	34	1	2	35	35	---	1	14	15
Del Norte.....	5	6	4	3	7	9	2	---	1	2
El Dorado.....	40	41	1	1	38	39	5	3	20	20
Fresno.....	43	49	1	1	43	48	1	2	2	49
Humboldt.....	32	37	11	12	31	40	12	9	13	12
Inyo.....	9	8	1	2	10	10	---	---	---	---
Kern.....	17	16	1	3	18	18	1	1	4	12
Lake.....	16	17	15	13	23	28	8	4	1	8
Lassen.....	12	18	3	---	15	15	---	---	7	3
Los Angeles.....	49	57	6	3	52	60	3	---	15	14
Marin.....	22	29	7	---	24	20	5	9	25	17
Mariposa.....	22	17	---	5	22	23	---	---	20	19
Mendocino.....	27	47	30	10	32	51	25	6	4	26
Merced.....	16	22	9	5	25	27	---	---	8	24
Modoc.....	9	14	11	9	20	18	---	---	3	3
Mono.....	4	6	2	---	4	---	---	6	1	6
Monterey.....	35	32	5	13	38	41	2	4	18	16
Napa.....	32	33	14	15	43	44	1	4	14	15
Nevada.....	40	40	4	4	42	43	2	1	21	25
Placer.....	43	48	5	---	47	45	1	3	13	3
Pumas.....	22	25	3	1	20	25	5	1	4	5
Sacramento.....	108	62	1	---	102	60	7	2	102	62
San Benito.....	16	18	5	5	18	21	3	2	8	13
San Bernardino.....	19	22	9	11	25	27	3	6	5	11
San Diego.....	11	12	25	24	29	32	7	4	6	31

TABLE No. 2—Continued.

COUNTIES.	Districts whose Schools are Well Ventilated.		Districts whose Schools are not Well Ventilated.		Districts whose Schools are Sup- plied with Good Furniture.		Districts whose Schools are Sup- plied with Pass- able Furniture.		Districts whose Schools are Sup- plied with Poor Furniture.		Districts whose Schools are Well Supplied with Apparatus.	
	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.
Alameda	41	39	2	6	22	31	15	1	6	13	8	19
Alpine	5	5	4	4	4	4	4	4	1	1	1	2
Anamor	24	32	7	1	8	21	15	7	9	5	6	17
Butte	62	60	1	1	25	40	16	6	21	20	4	17
Calaveras	33	34	2	2	11	16	15	11	9	9	2	4
Colusa	52	53	1	1	20	15	8	21	23	11	7	5
Contra Costa	35	36	1	1	26	28	3	6	6	2	7	17
Del Norte	6	8	3	1	4	4	4	1	5	5	1	2
El Dorado	37	42	4	1	21	20	9	19	11	3	10	11
Fresno	44	49	1	1	16	10	13	15	14	25	4	6
Humboldt	14	34	34	15	27	23	6	3	11	23	8	7
Inyo	10	10	1	1	1	4	6	1	4	5	3	10
Kern	18	17	2	2	12	13	2	2	4	4	9	6
Lake	26	32	5	1	3	5	9	7	19	20	9	1
Lassen	15	14	4	4	5	3	3	4	7	11	2	2
Los Angeles	55	60	1	1	35	41	11	10	9	9	8	13
Marin	29	29	1	1	11	21	11	6	7	2	13	13
Mariposa	20	23	1	1	13	16	3	3	6	4	22	42
Mendocino	38	53	19	4	14	15	6	23	37	19	7	18
Merced	25	27	1	1	8	20	11	4	6	6	8	6
Modoc	16	20	4	3	6	6	1	1	13	13	3	3
Mono	1	6	3	1	4	4	4	1	2	2	15	10
Monterey	24	42	16	3	18	26	7	6	15	13	20	25
Napa	46	45	1	1	34	37	2	1	10	10	20	12
Nevada	42	44	2	1	30	19	7	15	7	10	8	5
Placer	45	47	3	1	42	35	1	9	7	4	9	4
Plumas	20	26	5	1	14	6	4	11	7	9	4	37
Sacramento	65	62	1	1	20	36	39	21	1	4	4	2
San Benito	20	23	1	1	10	6	5	11	6	6	7	10
San Bernardino	27	33	3	1	10	11	6	7	13	15	7	12
San Diego	33	35	3	1	12	1	9	12	15	12	2	12

[illegible]

TABLE No. 2—Continued.

COUNTIES.	Districts whose Schools are Passably Supplied with Apparatus.		Districts whose Schools are Poorly Supplied with Apparatus.		Districts Maintaining Schools less than Six Months.		Districts Maintaining Schools Six Months or over, but less than Eight Months.		Districts Maintaining Schools Eight Months or over.	Average Months of all the Schools of the County.
	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.		
Alameda	25	11	7	15	1	5	3	36	42	9.05
Alpine	---	---	3	5	---	4	1	1	3	6.55
Anador	19	9	7	7	---	11	8	18	25	7.85
Butte	43	27	16	22	1	46	8	16	17	6.75
Calaveras	15	13	18	19	---	16	19	19	17	7.50
Columbia	18	32	24	16	---	30	11	22	18	7.00
Contra Costa	17	17	11	2	---	12	5	22	29	8.14
Del Norte	---	3	9	4	1	7	8	---	1	5.87
El Dorado	16	19	5	12	1	18	31	22	10	7.60
Fresno	20	15	15	28	---	29	11	12	18	7.79
Imperial	20	22	20	20	1	30	22	17	26	7.22
Inyo	5	7	5	3	---	7	7	3	3	6.70
Kern	5	1	8	8	---	13	8	7	7	7.50
Lake	12	4	10	22	---	22	9	4	4	6.10
Lassen	---	6	10	11	3	---	8	7	6	7.31
Los Angeles	25	36	28	22	---	4	12	51	48	9.05
Marin	14	13	7	3	1	8	10	21	26	8.00
Mariposa	2	6	7	4	1	18	1	1	5	6.43
Mendocino	32	12	3	3	---	42	45	15	11	7.00
Merced	1	1	11	8	---	20	1	5	7	6.80
Modoc	6	1	17	16	1	18	5	1	1	6.33
Mono	---	---	2	6	---	3	1	1	1	7.00
Monterey	9	23	16	12	1	19	14	20	30	7.76
Napa	4	4	22	18	1	35	12	11	14	7.15
Nevada	13	27	11	5	---	6	5	37	39	8.77
Placer	7	21	33	22	1	28	31	16	---	8.20
Plumas	3	11	13	11	1	16	8	8	7	7.19
Sacramento	34	19	16	5	---	20	11	37	51	7.07
San Benito	10	17	7	4	2	15	13	6	10	7.80
San Bernardino	4	4	18	19	4	4	6	20	35	7.24
San Diego	---	---	---	---	---	---	---	---	---	7.51
San Francisco	6	2	28	7	1	24	6	10	8	6.62
	---	---	---	---	---	---	---	10	12	10.00

TABLE No. 2—Continued.

COUNTIES.	Number of Schools for Colored Children.		Number of Pupils Attending Schools for Colored Children.		Districts which have Employed the same Teacher more than One Year.		Districts not having Sufficient Funds for an Eight Months' School.		Number of School Visits made by County Superintendents.		Number of Schools not Visited by County Superintendents.	
	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.
Alameda.....					27	30	7	8	94	157	4	
Alpine.....							3	1	5	6		
Anaador.....	1				11	13	11	15	27	35	4	1
Butte.....					16	19	45	64	66	103	26	
Calaveras.....					12	13	20	24	44	42		1
Colusa.....					9	16	40	52	74	68		
Contra Costa.....					16	14	24	26	40	81	1	
Del Norte.....					3	2	8	7	1	8	1	2
El Dorado.....					12	9	29	29	53	59	4	
Fresno.....					17	12	27	26	49	8	8	53
Humboldt.....					9	14	25	39	57	67	5	5
Inyo.....							7	10	12	13		
Kern.....					5	5	11	19	2	2	2	24
Lake.....					9	5	30	32	107	33	2	1
Lassen.....					2	2	10	14	26	24		
Los Angeles.....	1	1	16	29	18	27	15	13	82	136	9	
Marin.....					6	8	26	27	35	53		
Mariposa.....					4	6	21	22	20	15	2	5
Mendocino.....					14	18	28	28	79	88	1	
Merced.....					3	6	21	25	29	32	5	1
Modoc.....							*	*	17	43	7	2
Mono.....					1	1	2	6	4	12	1	1
Monterey.....					16	8	22	42	221	241		6
Napa.....	1		28		4	14	46	36	74	65	10	2
Nevada.....	1		13		22	20	21	17	39	107	11	
Placer.....					13	17	44	38	35	37	13	9
Plumas.....					6	7	22	25	29	28	1	
Sacramento.....		1	53	49	1	1	12	55	78	80		
San Benito.....					6	6	15	17	21	40	4	
San Bernardino.....					3	6	3	24	32	42	11	2
San Diego.....					5	9	35	38	25	42	23	7

TABLE No. 2—Continued.

COUNTIES.	Number of School Visits made by School Trustees.		Number of School Visits made by other Persons.		Number of Male Teachers.		Number of Female Teachers.		Total Number of Teachers.		Number of Teachers who are Graduates of the California State Normal School.	
	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.
Alameda	332	860	2,822	4,624	34	42	145	165	179	207	50	18
Alpine	13	7	58	25	2	-----	3	5	5	5	-----	-----
Amador	106	119	663	947	20	23	22	22	42	45	3	4
Butte	246	267	1,916	2,367	30	30	50	54	80	84	5	5
Calaveras	172	124	1,159	1,176	19	19	20	21	39	40	3	3
Colusa	167	167	926	1,041	37	37	23	25	60	62	3	10
Contra Costa	160	149	1,062	890	23	19	31	39	54	58	5	9
Del Norte	32	30	197	133	5	8	5	4	10	12	-----	-----
El Dorado	170	149	837	840	23	21	21	25	44	46	2	2
Fresno	217	176	737	795	31	34	15	19	46	53	4	5
Humboldt	119	147	683	1,090	32	37	30	32	62	69	2	2
Inyo	38	44	158	187	5	7	5	3	10	10	1	-----
Kern	52	66	266	359	9	10	12	13	21	23	-----	4
Lake	106	167	530	584	16	17	20	21	36	38	2	-----
Lassen	53	166	280	375	11	10	5	10	16	20	2	1
Los Angeles	359	463	2,184	2,779	56	60	55	63	111	123	-----	9
Marin	65	87	386	406	9	9	26	27	35	36	2	3
Mariposa	86	54	313	285	15	16	10	8	25	24	-----	-----
Mendocino	165	188	931	948	34	28	31	37	65	65	6	7
Merced	45	58	344	564	15	13	15	18	30	31	4	-----
Modoc	59	70	278	350	13	23	5	9	18	32	2	1
Mono	17	20	73	136	1	-----	4	6	5	6	-----	-----
Monterey	246	325	1,198	1,442	30	28	25	32	55	60	5	6
Napa	217	153	1,090	2,057	17	17	44	45	61	62	16	6
Nevada	434	314	1,448	2,272	35	36	38	41	73	77	2	4
Placer	148	169	981	981	16	20	41	37	57	57	2	2
Plumas	67	83	546	359	15	15	12	13	27	27	-----	1
Sacramento	274	185	5,116	1,397	23	29	106	117	129	146	3	6
San Benito	81	115	442	675	14	7	13	21	27	28	2	11
San Bernardino	145	208	753	574	16	23	18	18	34	41	2	2
San Diego	115	181	446	568	21	23	20	20	41	43	1	9

San Francisco	2,027	1,447	17,727	18,205	71	73	568	583	639	656	81	87
San Joaquin	308	306	4,563	748	37	33	72	76	109	109	8	109
San Luis Obispo	208	204	502	668	28	25	18	22	46	47	20	12
San Mateo	185	129	962	1,050	12	11	28	29	40	40	5	6
Santa Barbara	161	239	825	1,450	18	16	93	90	37	40	---	---
Santa Clara	384	378	2,083	2,176	39	39	46	14	132	129	31	47
Santa Cruz	184	231	1,913	1,372	18	51	16	14	64	65	6	7
Shasta	114	112	832	883	23	24	16	21	39	45	2	1
Sierra	55	49	378	366	14	13	12	15	26	28	1	1
Siskiyou	219	105	893	550	22	20	22	24	44	44	---	---
Solano	226	319	1,214	1,376	31	32	50	50	81	82	4	2
Sonoma	378	492	2,233	2,929	54	49	93	101	147	150	---	---
Stanislaus	120	108	734	682	26	26	25	18	51	44	3	---
Sutter	109	113	760	1,047	25	24	15	17	40	41	1	4
Tehama	126	147	622	773	20	19	21	23	41	42	---	---
Trinity	56	44	263	237	8	8	8	8	16	16	---	---
Tulare	120	288	675	2,198	42	46	31	32	73	78	---	---
Tuolumne	124	119	600	647	12	10	18	22	30	32	1	---
Ventura	51	51	232	288	11	11	11	13	22	24	2	3
Yolo	118	125	593	737	30	21	42	40	72	61	4	3
Yuba	152	172	998	---	24	24	23	23	47	47	2	2
Totals	9,931	10,429	68,445	69,811	1,192	1,236	2,101	2,217	3,293	3,453	300	408

TABLE No. 2—Continued.

COUNTIES.	Number of Teachers who are Graduates of any other State Normal School.		Number of Teachers who hold Life Diplomas.		Number of Teachers holding State Educational Diplomas.		Number of Teachers holding First Grade State Certificates.		Number of Teachers holding Second Grade State Certificates.		Number of Teachers holding Third Grade State Certificates.	
	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.
Alameda	25	23	45	47	85	80	40	44	30	20	8	
Alpine	---	---	---	---	---	---	---	---	---	---	---	---
Anaador	2	4	3	3	1	5	11	1	1	---	---	---
Butte	---	---	8	8	7	5	4	---	29	---	4	---
Calaveras	1	3	3	5	4	3	7	31	2	6	1	---
Colusa	6	7	4	9	5	10	10	9	2	3	---	---
Contra Costa	1	3	5	7	5	5	8	---	4	---	---	---
Del Norte	---	---	---	---	---	---	27	3	15	---	4	---
El Dorado	4	3	2	2	2	1	3	---	1	---	---	---
Fresno	5	2	7	3	3	5	14	2	1	---	1	---
Humboldt	6	7	6	6	4	7	4	1	4	---	---	---
Inyo	1	---	---	---	10	9	14	1	2	---	---	---
Kern	---	2	---	3	1	3	2	---	---	---	---	---
Lake	2	2	2	4	4	2	2	---	1	---	---	---
Lassen	---	1	1	1	12	6	14	2	1	5	---	---
Los Angeles	6	7	13	19	12	18	36	4	4	---	---	---
Marin	1	3	6	8	4	3	10	11	8	5	---	---
Mariposa	---	---	1	2	2	2	2	1	2	1	---	---
Mendocino	6	5	8	10	5	7	17	4	7	1	1	---
Merced	1	---	2	2	5	2	13	9	15	1	---	---
Modoc	---	1	---	1	2	3	---	---	---	---	---	---
Mono	---	---	1	---	---	---	---	---	1	---	---	---
Monterey	1	4	4	6	9	8	18	9	9	13	13	---
Napa	9	2	2	3	12	9	21	20	11	6	1	---
Nevada	4	3	8	13	4	7	13	5	7	---	---	---
Placer	---	---	6	9	4	2	2	2	2	2	2	---
Plumas	2	1	2	3	3	5	6	1	1	---	---	---
Sacramento	---	---	---	---	---	---	---	---	---	---	---	---
San Benito	---	2	17	20	20	20	23	33	40	3	37	---
San Bernardino	---	1	3	4	1	3	5	3	5	1	---	---
San Diego	---	6	1	4	---	2	9	---	1	---	---	---
	---	---	1	1	3	5	3	3	4	---	---	---

San Francisco	43	46	104	131	79	97	59	71	37	52	28	37
San Joaquin	12	9	4	5	6	21	6	29	4	10	---	---
San Luis Obispo	2	4	---	---	3	5	---	6	---	4	---	---
San Mateo	3	3	1	2	3	4	16	13	2	3	1	---
Santa Barbara	3	3	3	7	5	9	15	10	2	1	---	---
Santa Clara	2	3	14	20	19	17	56	56	33	24	10	12
Santa Cruz	12	4	2	6	6	5	8	8	4	2	3	5
Shasta	2	6	5	6	8	5	13	4	---	2	---	---
Sierra	---	---	1	9	4	2	---	1	---	3	---	---
Siskiyou	4	3	1	5	2	11	8	15	---	1	---	---
Solano	---	2	5	10	13	9	9	14	---	1	---	---
Sonoma	---	---	12	10	8	20	8	56	4	72	4	22
Stanislaus	1	3	4	3	3	10	12	30	2	20	---	3
Sutter	5	3	---	2	3	5	10	13	1	2	---	---
Tehama	---	1	1	3	3	5	1	10	---	---	---	---
Trinity	1	2	1	1	2	2	5	3	1	---	---	---
Tulare	---	---	5	4	7	12	2	12	6	1	---	---
Tuolumne	1	---	2	3	3	3	5	5	1	2	---	---
Ventura	4	2	2	4	2	4	16	3	3	---	---	---
Yolo	5	---	1	5	2	2	11	9	---	1	---	2
Yuba	6	---	7	8	10	3	7	7	5	5	---	---
Totals	190	188	336	476	417	489	657	690	299	410	113	153

TABLE No. 2—Continued.

COUNTIES.	Number of Teachers who attended County Institutes.		Number of Teachers who subscribed for some Educational Journal.		Number of Trustees appointed by County Superintendents.		Average Monthly Wages paid to Male Teachers.		Average Monthly Wages paid to Female Teachers.		Salary of County Superintendents.	
	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.
Alameda.....	*	194	70	71	23	31	\$419 50	\$412 20	\$80 05	\$71 50	\$1,500 00	\$1,500 00
Alpine.....	*	---	---	---	13	9	69 50	---	69 50	63 58	100 00	100 00
Anamor.....	25	45	20	25	12	14	77 00	80 00	62 00	55 00	500 00	500 00
Butte.....	63	68	23	42	72	20	88 00	85 00	68 00	67 50	1,500 00	1,500 00
Calaveras.....	*	41	17	19	11	9	77 00	75 00	58 00	60 00	700 00	720 00
Colusa.....	51	61	33	27	50	15	83 00	81 00	72 00	74 00	700 00	1,200 00
Contra Costa.....	50	56	17	40	21	7	92 60	85 00	66 50	67 00	750 00	750 00
Del Norte.....	*	2	6	4	1	5	75 00	68 12	55 00	55 00	250 00	250 00
El Dorado.....	33	33	38	10	11	11	72 51	75 00	65 23	53 25	900 00	900 00
Fresno.....	33	51	17	37	41	42	85 87	77 08	72 27	70 68	---	---
Humboldt.....	62	61	50	32	4	14	85 00	88 87	69 00	69 00	700 00	700 00
Inyo.....	*	---	4	2	14	13	92 81	95 14	82 00	80 33	400 00	400 00
Kern.....	*	---	8	---	4	7	82 50	90 00	75 00	74 00	---	---
Lake.....	26	32	19	12	22	16	80 20	86 40	66 77	65 00	700 00	700 00
Lassen.....	*	---	---	---	10	11	84 60	70 00	79 00	70 00	300 00	300 00
Los Angeles.....	108	123	51	58	19	23	83 42	80 41	73 87	70 46	1,500 00	1,500 00
Marin.....	32	24	7	20	18	28	90 00	85 00	69 44	63 66	1,000 00	1,000 00
Mariposa.....	17	19	6	11	12	10	85 66	79 00	67 00	65 66	350 00	350 00
Mendocino.....	61	61	40	50	19	25	78 75	77 75	65 50	64 55	1,140 00	1,140 00
Merced.....	20	31	---	5	15	35	84 00	96 00	70 00	70 00	1,000 00	1,000 00
Modoc.....	17	18	8	---	9	7	77 50	77 50	65 00	60 00	500 00	500 00
Mono.....	*	---	2	1	2	---	83 33	---	73 33	78 00	150 00	250 00
Monterey.....	35	---	24	18	38	42	83 50	78 40	68 00	63 00	800 00	800 00
Napa.....	53	62	15	27	36	35	70 00	70 00	65 00	63 00	600 00	600 00
Nevada.....	69	76	28	55	9	4	91 91	85 21	62 87	63 75	1,000 00	1,000 00
Placer.....	46	48	12	13	3	6	87 18	72 37	65 79	67 00	1,200 00	1,200 00
Plumas.....	15	23	8	10	13	18	90 60	84 33	70 45	68 33	500 00	520 00
Sacramento.....	126	132	99	129	20	24	69 00	62 00	69 00	62 00	1,600 00	1,600 00
San Benito.....	*	---	14	15	12	15	86 50	89 00	60 30	63 00	500 00	500 00
San Bernardino.....	31	37	26	18	22	26	70 26	68 70	70 09	55 39	580 00	775 50
San Diego.....	26	30	10	19	14	16	75 83	73 76	75 37	68 46	600 00	600 00

TABLE No. 2—Continued.

COUNTIES.	Number of Certificates Granted to Male Teachers.			Number of Certificates Granted to Female Teachers.			Number of Certificates Renewed.			Number of Applicants Rejected.		
	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.	1878.	1879.
Alameda	15	9	47	59	27	9	135	69				
Alpine	1		1									
Anamor	12	4	30	8	8	12	15	15				
Butte	10	9	23	19	22	10	16	19				
Calaveras	12	3	10	3	7	8		11				
Colusa	17	3	13	11	3	3	32	25				
Contra Costa	6	2	19	10	12	6	18	18				
Del Norte	4		1	2	3	5	5					
El Dorado	5	4	24	8	1	1	22	15				
Fresno	11	4	4	3	6	9	10	8				
Humboldt	7	4	8	12	9	4	19	16				
Inyo	1											
Kern	1	2	3	6	2	2	5	4				
Lake	5	1	11	7	5	1	15	8				
Lassen	1	2	4	6	4	5	1	3				
Los Angeles	13	6	24	15	19	19	123	69				
Marin	8		39	5	7	1	30	4				
Mariposa	2	3	1	2	4	1						
Mendocino	12	8	9	15	6	13	32	7				
Merced	6	3	11	4	2	1	17	18				
Modoc	5	2		1	1		7	6				
Mono												
Monterey	10	3	10	11	2	2	36	20				
Napa	4	10	15	12	10	7	24	18				
Nevada	17	12	15	16	18	8	72	29				
Placer	3	1	13	3	19	17	10	13				
Plumas	3	2	1	9	2	1	4	4				
Sacramento	12	13	82	45	3	9	60	51				
San Benito	3	3	18	7		7	9	13				
San Bernardino												
San Diego	9	3	7	8	10	15	24	17				
San Francisco		1	10	4	1	6	13	8				
	28	12	183	179	99	89	298	293				

San Joaquin	12	13	32	26	7	6	53	62
San Luis Obispo	7	6	7	5	4	15	20	22
San Mateo	13	5	28	11	5	14	26	9
Santa Barbara	7	7	28	15	3	8	54	16
Santa Clara	15	11	39	55	9	7	126	59
Santa Cruz	2	3	10	13	12	13	24	20
Shasta	6	4	8	2	12	8	15	11
Sierra	3	1	9	4	6	5	3	6
Siskiyou	8	6	15	1	5	12	12	26
Solano	15	5	13	15	23	8	20	23
Sonoma	24	18	45	29	65	46	60	47
Stanislaus		3	8	3	6	9	24	
Sutter		9	13	14	9	11	5	6
Tehama	12	7	13	8	5	3	10	14
Trinity	14		3	1	1			2
Tulare	23	9	22	9	10	11	53	20
Tuolumne	2	3	12	1	1	9	4	17
Ventura	3	1	2	5		5	8	4
Yolo	9	9	8	16	6	3	40	16
Yuba	9	4	24	26	6	6	9	7
Totals	428	251	975	744	507	458	1,581	1,162

TABLE No. 3.

Statement of financial statistics showing the receipts from all sources of school revenue for the school year ending June 30th, 1878.

COUNTIES.	Balance on hand at the Beginning of School Year.	Cash Received from State Appropriation.	Cash Received from County Taxes.	Cash Received from City and District Taxes.	Cash Received from Miscellaneous Sources.	Total Receipts.
Alameda	\$48,481 85	\$98,839 68	\$54,177 60	\$100,377 69	\$1,711 45	\$303,782 27
Alpine	1,548 47	899 84	2,006 91	---	---	4,455 22
Anaador	4,227 00	20,434 11	8,578 17	124 17	---	33,663 45
Butte	10,989 23	29,691 58	23,517 81	9,774 02	343 10	76,315 71
Calaveras	5,268 35	16,500 00	7,110 00	---	787 50	29,755 85
Colusa	6,839 54	21,312 00	15,465 85	3,546 79	135 25	47,299 43
Contra Costa	15,810 82	26,243 57	17,324 57	137 24	1,024 83	60,560 60
Del Norte	535 70	3,494 54	1,691 67	541 50	184 10	6,467 51
El Dorado	8,000 76	19,212 57	5,968 21	2,071 30	78 35	35,331 19
Fresno	3,688 87	15,081 56	13,763 68	---	---	34,474 11
Humboldt	19,985 84	28,131 84	19,771 25	2,289 29	50 00	70,225 22
Inyo	1,129 82	3,915 09	3,418 11	389 95	1,555 13	10,418 10
Kern	6,031 40	7,937 64	8,340 64	16,248 40	224 00	38,982 08
Lake	4,263 97	13,238 26	6,893 65	2,854 44	8,161 00	35,321 32
Lassen	2,163 45	5,738 42	4,924 38	---	203 00	13,029 25
Los Angeles	34,033 93	81,308 32	30,861 00	13,137 59	576 10	161,916 94
Marin	9,828 39	14,932 97	6,974 00	---	---	31,735 36
Mariposa	2,563 41	7,885 23	4,960 99	---	700 60	16,109 63
Mendocino	12,434 66	26,294 27	15,243 35	1,696 36	12 00	55,390 64
Merced	5,071 57	9,161 96	9,446 00	---	199 80	23,879 33
Modoc	1,555 28	7,284 27	4,062 02	---	30 39	12,931 96
Mono	540 54	800 00	1,749 78	---	301 80	3,392 12
Monterey	5,427 30	27,200 42	12,976 05	1,367 26	---	46,971 03
Napa	12,939 61	24,595 62	14,782 19	1,693 17	366 55	54,397 14
Nevada	21,775 27	40,003 40	28,186 40	---	297 00	93,481 22
Placer	9,145 93	21,538 68	9,198 99	1,319 91	2,289 75	43,493 26
Plumas	5,477 64	8,069 65	8,202 00	1,981 19	1,200 73	24,931 21
Sacramento	31,343 64	54,761 96	31,445 73	40,518 80	1,975 00	166,045 13
San Benito	3,188 80	11,721 60	7,462 89	---	107 10	22,480 39
San Bernardino	6,800 34	18,039 76	8,995 13	2,558 14	---	36,323 37

San Diego.....	9,255 68	13,363 52	8,608 94	385,671 12	69,816 45	31,228 14
San Francisco.....	183,398 44	419,584 30	47,479 86	7,556 64	3,517 43	1,058,470 31
San Joaquin.....	45,489 01	40,639 61	6,898 50	876 53	---	144,732 55
San Luis Obispo.....	5,699 77	20,325 23	10,430 20	239 25	750 00	33,640 03
San Mateo.....	14,288 19	19,845 15	9,259 00	806 00	---	45,522 79
Santa Barbara.....	12,665 84	21,856 64	53,896 00	25,363 88	3,890 80	44,676 98
Santa Clara.....	33,533 58	72,150 70	18,502 00	3,221 51	311 26	188,834 96
Santa Cruz.....	20,730 61	29,394 77	6,514 49	---	---	72,160 15
Shasta.....	6,514 49	13,276 90	6,836 27	---	---	26,627 66
Sierra.....	6,638 20	8,961 88	9,389 36	---	---	24,989 44
Siskiyou.....	5,400 12	14,586 88	10,868 38	991 88	238 63	31,995 89
Solano.....	16,962 90	36,119 89	28,355 55	4,212 47	945 00	86,615 81
Sonoma.....	26,424 36	60,413 56	34,621 64	12,862 65	881 40	135,203 61
Stanislaus.....	7,989 60	13,971 20	10,556 08	65 02	669 73	33,251 63
Sutter.....	6,195 94	12,421 30	12,632 00	2,978 08	1,237 06	33,464 38
Tehama.....	5,298 95	14,871 04	12,227 00	1,847 58	463 85	34,618 42
Trinity.....	4,785 99	5,337 80	4,151 00	---	---	14,274 79
Tulare.....	5,370 10	26,476 95	14,378 76	4,642 91	868 75	51,737 47
Tuolumne.....	5,345 77	13,905 85	3,415 90	79 50	---	22,747 02
Ventura.....	6,630 26	10,813 45	6,886 00	882 31	---	25,212 02
Yolo.....	6,368 12	24,045 52	15,184 25	941 91	---	46,539 80
Yuba.....	9,164 58	19,457 06	14,093 34	3,429 31	3 05	46,147 34
Totals.....	\$745,091 88	\$1,576,157 58	\$728,360 05	\$664,654 91	\$106,396 84	\$5,820,661 26

TABLE No. 3—Continued.

Statement of financial statistics showing the receipts from all sources of school revenue for the school year ending June 30th, 1872.

COUNTIES.	Balance on hand at the Beginning of School Year.	Cash Received from State Apportionment.	Cash Received from County Taxes.	Cash Received from City and District Taxes.	Cash Received from Miscellaneous Sources.	Total Receipts.
Alameda.....	\$28,973 99	\$89,961 00	\$61,445 00	\$124,211 71	\$1,518 16	\$305,269 86
Alpine.....	1,074 26	720 72	2,950 01	-----	-----	4,744 99
Amador.....	6,358 34	18,416 28	18,416 20	1,507 36	1,045 35	33,791 73
Butte.....	11,005 74	27,368 00	23,116 20	11,611 20	-----	73,398 64
Calaveras.....	4,507 00	13,151 80	6,026 40	-----	246 85	25,932 05
Colusa.....	7,200 92	19,303 92	14,782 45	6,165 62	341 00	47,793 91
Contra Costa.....	15,766 25	22,833 21	18,350 63	2,054 67	1,200 71	60,205 47
Del Norte.....	1,141 55	3,124 17	2,874 02	-----	29 50	7,169 24
El Dorado.....	7,941 68	16,377 92	6,656 86	-----	577 43	31,353 89
Fresno.....	6,181 90	14,298 38	16,877 54	13,500 00	-----	50,857 82
Humboldt.....	23,315 83	25,827 86	22,193 55	3,032 32	-----	74,389 56
Inyo.....	1,878 36	2,986 83	2,817 20	-----	214 37	7,896 96
Kern.....	3,948 23	8,641 47	8,909 95	1,812 65	641 00	23,953 30
Lake.....	5,454 79	11,413 71	7,283 59	2,575 08	70 85	26,798 02
Lassen.....	2,371 54	5,787 42	5,687 84	-----	-----	13,846 80
Los Angeles.....	41,619 88	72,274 88	32,732 53	14,398 90	434 97	161,371 16
Marin.....	8,048 82	13,312 69	12,801 52	8,630 02	50 00	43,043 05
Mariposa.....	2,827 95	6,339 18	5,287 13	-----	170 50	14,624 76
Mendocino.....	10,632 51	23,826 13	15,879 77	723 60	-----	51,062 01
Merced.....	5,077 89	8,128 84	11,334 82	-----	918 91	25,460 46
Modoc.....	2,775 91	6,846 84	4,346 70	-----	94 54	14,063 99
Mono.....	623 93	1,465 68	1,534 32	2,773 35	210 00	6,607 28
Monterey.....	5,987 77	22,862 07	14,123 00	2,050 39	-----	45,023 23
Napa.....	13,696 19	21,760 20	15,935 00	4,615 89	-----	56,007 28
Nevada.....	21,016 83	34,989 57	31,058 57	413 00	167 00	87,644 97
Placer.....	3,957 29	19,671 01	15,225 42	814 30	470 81	40,138 83
Plumas.....	5,376 51	6,949 05	8,033 65	933 97	1,588 21	23,381 39
Sacramento.....	36,461 55	53,638 77	35,674 46	31,102 81	2,211 01	139,088 60
San Benito.....	4,669 07	10,727 64	7,836 26	826 05	52 70	44,111 72
San Bernardino.....	8,552 20	17,465 46	7,021 15	-----	12 83	33,844 05
San Diego.....	4,316 22	11,649 33	8,148 50	3,600 29	663 30	28,377 64
San Francisco.....	111,865 46	386,990 62	-----	373,559 91	67,606 65	*939,822 64

San Joaquin.....	52,281 59	36,944 55	52,099 37	8,647 06	1,236 46	151,209 03
San Luis Obispo.....	4,693 49	18,232 22	9,788 20	2,190 62	-----	34,904 53
San Mateo.....	10,104 14	16,553 20	11,180 80	-----	123 05	37,961 19
Santa Barbara.....	11,763 82	19,695 06	10,834 20	4,142 84	816 70	47,252 62
Santa Clara.....	60,472 03	65,582 52	46,744 10	14,245 28	1,169 50	188,213 43
Santa Cruz.....	19,222 46	23,668 72	19,726 40	826 45	190 50	65,634 53
Shasta.....	6,192 73	13,485 36	8,356 78	-----	-----	28,031 87
Sierra.....	4,617 59	8,755 60	7,483 00	412 72	-----	21,268 91
Siskiyou.....	5,090 60	13,139 28	12,348 78	661 00	182 50	31,422 16
Solano.....	16,809 67	31,614 66	23,229 82	427 24	-----	72,081 39
Sonoma.....	32,121 50	52,063 92	31,669 58	10,940 72	640 00	127,435 72
Stanislaus.....	5,078 76	11,739 42	14,365 32	361 36	249 35	31,794 21
Sutter.....	5,899 24	11,174 60	10,793 40	3,151 81	998 50	32,017 55
Tehama.....	6,305 32	13,700 61	13,193 69	995 61	478 42	34,673 65
Trinity.....	3,785 34	4,826 00	5,250 00	-----	5,386 50	19,247 81
Tulare.....	2,795 99	23,710 27	21,327 16	5,468 20	472 08	53,773 70
Tuolumne.....	3,466 55	12,515 58	4,620 00	-----	-----	20,602 13
Ventura.....	4,937 96	10,169 45	8,099 28	682 73	-----	23,589 42
Yolo.....	7,231 44	20,862 00	20,753 00	628 08	-----	49,474 52
Yuba.....	8,035 70	17,373 51	10,470 00	5,423 55	74 50	39,407 26
Totals.....	\$684,932 28	\$1,429,162 18	\$778,011 32	\$668,840 77	\$92,852 41	\$3,653,798 96

* Less \$83,715 12 outstanding warrants July 1, 1878.

TABLE No. 4.

Statement of financial statistics showing school expenditures for the school year ending June 30th, 1878.

COUNTIES.	Amount Paid for Teachers' Salaries.	Amount Paid for Rent, Repairs, Fuel, and Con-tingent Ex-penses.	Amount Paid for School Libraries.	Amount Paid for School Apparatus.	Total Current Expenses.	Amount Paid for Sites, Build-ings, and School Furni-ture.	Total Expendi-tures.	Total Receipts.	Balance on hand at Close of School Year.
Alameda	\$156,694 79	\$49,632 08	\$1,672 53	\$500 44	\$208,499 84	\$87,214 44	\$295,714 28	\$203,788 27	\$28,925 99
Alpine	2,130 03	205 31	35 25	-----	2,370 59	-----	2,370 59	4,455 22	2,024 63
Anador	22,817 60	3,276 70	660 39	220 47	26,974 56	330 53	27,305 11	33,663 43	6,358 34
Butte	43,579 78	6,979 53	976 50	472 26	52,008 07	13,046 33	65,054 40	76,515 74	11,431 34
Calaveras	20,327 12	2,459 84	228 42	579 84	23,595 22	1,653 63	25,248 85	29,755 85	4,507 00
Colusa	30,773 76	3,412 15	687 39	736 39	33,610 28	4,488 24	40,098 52	47,299 43	7,200 91
Contra Costa	34,566 56	4,998 75	1,412 17	326 95	41,304 43	2,349 02	43,653 45	60,560 60	16,907 15
Del Norte	4,549 00	339 36	183 27	115 95	5,187 58	483 50	5,671 08	6,467 51	796 43
El Dorado	22,097 16	2,827 88	508 50	7 30	25,440 84	1,913 66	27,354 50	33,331 19	7,976 69
Fresno	23,944 57	2,405 63	1,279 50	345 31	27,974 41	293 20	28,267 61	34,474 11	6,206 50
Humboldt	37,345 22	4,424 93	1,526 23	285 80	43,582 18	3,460 86	47,043 04	70,228 22	23,185 18
Inyo	5,930 00	575 90	12 00	295 05	6,812 95	1,726 79	8,539 74	10,418 10	1,878 36
Kern	16,455 89	2,774 36	442 86	293 37	19,876 48	15,488 24	35,364 72	38,982 08	3,617 36
Lake	16,015 51	1,714 91	627 24	108 66	18,466 32	11,243 95	29,710 27	35,321 32	5,611 05
Lassen	9,041 87	594 17	85 27	51 50	9,772 81	952 41	10,725 22	13,029 25	2,304 63
Los Angeles	82,807 56	17,470 31	2,435 96	798 77	103,512 60	16,784 46	120,297 06	161,916 94	41,619 88
Marin	19,172 60	2,888 21	839 43	36 80	22,937 04	761 50	23,698 54	31,755 36	8,056 82
Mariposa	11,446 09	1,026 45	358 61	62 53	12,893 68	700 00	13,593 68	16,109 63	2,515 95
Mendocino	34,492 57	4,804 22	1,841 80	847 88	41,986 47	2,971 66	44,958 13	55,590 64	10,632 51
Merced	15,838 38	2,013 50	562 72	61 30	18,475 90	360 55	18,836 45	23,879 33	5,042 88
Modoc	9,115 40	494 66	257 96	237 64	10,125 66	10,125 66	10,125 66	12,931 96	2,806 30
Mono	2,105 00	156 88	53 25	54 10	2,369 23	25 00	2,394 23	3,392 12	997 89
Monterey	35,091 93	3,909 27	1,228 36	131 80	40,381 36	611 07	40,992 43	46,371 03	5,378 60
Napa	31,043 50	6,601 95	1,252 78	198 52	39,096 75	8,095 32	47,192 07	54,397 14	12,205 07
Nevada	53,535 23	8,856 52	1,962 98	121 43	64,476 21	7,986 52	72,462 73	93,481 22	21,018 49
Placer	29,225 25	4,221 19	985 31	103 69	34,535 44	4,482 22	39,017 66	43,493 26	4,475 60
Plumas	14,161 70	1,816 34	793 35	475 92	17,247 31	1,967 59	19,214 90	24,931 21	5,716 31
Sacramento	84,422 52	14,562 14	1,377 74	-----	100,362 40	4,478 63	104,841 03	160,045 13	55,204 10
San Benito	15,102 60	1,982 03	776 23	195 31	18,056 17	328 29	18,384 46	22,480 39	4,095 93
San Bernardino	19,565 18	4,413 13	1,627 60	117 46	25,723 37	2,193 26	27,916 63	36,323 37	8,406 73
San Diego	22,235 84	1,601 60	1,116 09	71 60	25,025 13	588 22	25,613 35	31,228 14	5,614 79

San Francisco	674,047 84	153,540 37	3,000 00	830,588 21	158,670 78	989,258 99	1,058,470 31 @ 41,260 48	27,950 84
San Joaquin	76,293 09	13,265 45	1,845 10	91,637 69	799 90	92,437 59	144,732 55	52,274 96
San Luis Obispo	24,472 46	3,123 56	996 99	28,672 81	291 50	28,964 31	33,640 03	4,675 72
San Mateo	25,530 19	4,728 72	767 38	31,392 49	3,958 08	35,350 57	45,522 79	10,172 22
Santa Barbara	23,607 04	6,706 42	838 75	31,333 91	1,579 25	32,913 16	44,676 98	11,763 82
Santa Clara	92,317 65	22,040 76	2,107 75	116,853 88	11,262 25	128,116 13	188,834 95	60,718 83
Santa Cruz	39,287 84	7,930 92	1,239 97	48,736 55	4,150 85	52,887 40	72,160 15	19,272 75
Shasta	17,423 54	1,148 81	606 69	19,179 04	1,256 35	20,435 39	26,627 66	6,192 27
Sierra	15,156 39	2,009 77	535 97	17,865 90	1,809 01	19,674 91	24,989 44	5,314 53
Siskiyou	22,123 25	2,333 24	872 57	25,723 34	1,181 26	26,904 60	31,995 89	5,091 29
Solano	49,443 92	9,151 08	1,397 61	60,126 71	9,675 43	69,806 14	86,615 81	16,809 67
Sonoma	79,665 37	10,060 29	2,322 01	92,404 09	10,455 42	102,859 51	135,293 61	32,344 10
Stanislaus	23,021 88	3,361 50	1,769 48	28,152 86	---	28,152 86	33,251 63	5,098 77
Sutter	21,236 93	2,163 98	1,337 27	25,355 94	2,294 43	27,680 37	33,464 38	5,784 01
Tehama	21,143 99	3,488 16	544 76	25,252 36	3,959 74	28,312 10	34,618 42	6,306 32
Trinity	8,691 00	1,470 94	183 76	10,355 95	103 50	10,489 45	14,274 79	3,785 34
Tulare	38,744 81	3,313 21	2,278 80	45,245 38	2,868 38	48,113 76	51,734 47	3,623 71
Tuolumne	16,054 10	1,393 63	881 20	18,448 66	178 06	18,626 72	22,747 02	4,120 30
Ventura	14,064 47	2,622 51	915 29	17,700 27	2,573 79	20,274 06	25,212 02	4,937 96
Yolo	32,211 05	5,106 54	880 13	38,424 67	1,340 58	39,765 25	46,539 80	6,774 55
Yuba	32,382 77	4,108 50	798 09	37,594 36	607 25	38,111 61	46,147 34	8,035 73
Totals	\$2,272,551 19	\$426,707 66	\$53,947 85	\$2,755,720 55	\$390,094 92	\$3,155,815 27	\$3,820,661 26	\$664,845 99

* Less unpaid warrants, July 1st, 1877.

TABLE No. 4—Continued.

Statement of financial statistics showing school expenditures for the school year ending June 30th, 1879.

COUNTIES.	Amount Paid for Teachers' Salaries.	Amount Paid for Rent, Repairs, Fuel, and Contingent Expenses.	Amount Paid for School Libraries.	Amount Paid for School Apparatus.	Total Current Expenses.	Amount Paid for Sites, Buildings, and School Furniture.	Total Expenditures.	Total Receipts.	Balance on hand at close of school year.
Alameda-----	\$170,800 77	\$52,497 23	\$1,149 21	\$1,465 89	\$231,014 10	\$53,493 09	\$285,467 19	\$305,209 86	\$19,802 67
Alpine-----	2,435 00	172 68	15 25	-----	2,622 93	100 00	2,722 93	1,744 99	9,022 93
Amador-----	24,179 53	2,409 73	326 58	635 32	27,551 16	3,319 11	30,870 27	35,791 73	4,921 46
Butte-----	42,787 88	6,319 65	889 01	345 60	50,342 14	14,083 24	64,425 38	73,398 64	8,973 26
Calaveras-----	19,746 36	1,240 54	359 42	188 69	21,335 01	504 25	22,039 26	25,932 05	3,892 79
Colusa-----	31,947 57	2,671 25	1,284 54	405 27	36,308 63	5,990 82	42,299 45	47,793 91	5,086 46
Contra Costa-----	38,453 67	4,487 55	938 90	88 30	43,968 42	2,341 52	46,309 94	60,205 47	13,895 53
Del Norte-----	5,282 35	654 13	262 08	36 50	6,235 06	-----	6,235 06	7,169 24	934 18
El Dorado-----	20,721 29	2,980 72	411 30	49 25	24,168 56	361 84	24,530 40	31,553 89	7,023 49
Fresno-----	30,606 46	2,370 87	843 16	428 90	34,249 39	12,234 33	46,483 72	50,576 82	4,094 10
Humboldt-----	40,082 89	5,908 81	1,512 07	6 11	47,509 88	6,937 09	54,446 97	74,389 56	19,942 59
Inyo-----	6,242 00	337 47	167 23	105 82	6,852 52	924 00	7,776 52	7,806 96	20 44
Kern-----	15,644 25	2,645 68	500 06	183 47	18,971 46	2,368 39	21,339 85	23,953 20	2,613 35
Lake-----	17,433 39	1,529 42	829 47	126 58	19,918 86	3,290 52	23,209 38	26,798 62	3,588 64
Lassen-----	9,223 25	1,173 17	127 45	238 81	10,762 68	250 00	11,012 68	13,846 80	2,834 12
Los Angeles-----	88,058 07	21,019 28	2,299 05	537 09	111,913 49	15,284 97	127,198 47	161,371 16	34,172 70
Marin-----	21,166 73	7,131 62	648 31	128 92	29,075 58	266 10	29,341 68	43,043 05	13,701 37
Mariposa-----	10,565 76	749 88	562 15	62 25	11,940 64	-----	11,940 64	14,624 76	2,684 72
Mendocino-----	34,151 65	4,671 66	1,319 30	555 13	40,697 74	852 72	41,550 46	51,062 01	9,511 55
Merced-----	16,846 61	2,939 39	591 45	286 77	21,377 45	274 70	20,632 15	23,460 46	4,808 31
Modoc-----	10,848 26	648 88	286 77	169 16	11,953 07	113 75	12,066 82	14,063 99	2,001 17
Monterey-----	3,085 00	278 74	134 00	36 00	3,533 74	2,738 35	6,272 09	6,607 28	335 19
Napa-----	33,693 81	4,137 31	1,447 48	138 00	39,416 60	482 71	39,899 31	45,023 23	5,123 92
Nevada-----	32,873 00	4,789 89	939 20	206 80	38,808 89	2,243 68	41,052 57	56,007 28	14,954 71
Placer-----	53,765 60	7,932 54	1,327 52	264 10	63,289 76	4,746 58	67,366 34	87,644 97	20,278 63
Plumas-----	28,964 37	3,445 77	896 27	58 86	33,365 27	2,527 49	35,892 76	40,138 83	4,246 07
Sacramento-----	14,524 56	1,122 08	218 70	144 32	16,009 66	2,374 15	18,383 81	23,381 39	4,997 58
San Benito-----	87,515 90	20,074 20	2,188 64	55 00	109,833 74	12,320 85	122,154 59	139,088 60	36,934 01
San Bernardino-----	15,931 66	2,695 98	501 09	518 32	25,949 05	838 80	26,785 85	24,111 72	3,625 87
San Bernardino-----	21,061 82	3,907 41	741 43	239 25	25,949 91	2,597 30	28,547 21	33,844 05	5,296 84
San Diego-----	21,028 13	1,089 34	961 27	86 13	23,164 87	2,297 73	25,462 62	28,377 64	2,915 02
San Francisco-----	632,848 32	82,947 05	2,000 00	-----	717,793 37	92,378 02	\$810,173 39	\$939,822 64	20,381 62

San Luis Obispo -----	23,456 61	3,106 30	999 00	493 60	28,055 51	2,450 62	30,506 13	34,904 53	4,398 40
San Mateo -----	24,714 73	3,737 29	508 45	100 00	29,060 47	624 65	29,685 12	37,961 19	8,276 07
Santa Barbara -----	23,960 25	7,099 33	586 17	475 29	37,121 04	3,577 82	33,698 86	47,252 62	11,553 76
Santa Clara -----	96,950 68	26,614 31	1,753 91	461 63	125,780 53	6,184 75	131,965 28	188,213 43	56,248 15
Santa Cruz -----	42,107 73	5,529 77	894 38	53 83	48,585 71	1,474 28	50,059 99	65,634 53	15,574 54
Shasta -----	21,150 83	1,807 67	747 22	-----	23,705 72	247 80	23,953 52	28,034 87	4,081 35
Sierra -----	15,467 94	30 99	483 75	-----	16,782 68	6 12	16,788 80	21,268 91	4,480 11
Siskiyou -----	22,329 79	1,934 08	607 30	180 13	25,651 30	843 50	25,894 80	31,422 16	5,527 36
Solano -----	48,265 98	7,246 15	1,258 61	540 03	57,310 77	2,021 88	59,332 65	72,081 39	12,784 74
Sonoma -----	79,386 99	11,990 40	1,950 69	382 62	93,710 70	5,207 33	98,918 03	127,435 72	28,517 69
Stanislaus -----	22,221 77	2,079 49	897 27	-----	25,198 53	224 95	25,423 48	31,794 21	6,370 73
Sutter -----	20,003 17	3,079 99	573 06	603 46	24,259 68	2,658 97	26,918 65	32,017 55	5,098 90
Tehama -----	21,719 27	4,896 67	782 72	370 03	27,768 69	1,746 38	29,515 07	34,673 65	5,158 58
Trinity -----	8,677 85	937 83	192 23	224 53	10,652 44	6,936 07	17,008 51	19,247 84	2,239 33
Tulare -----	39,134 12	4,172 16	1,688 63	444 65	45,439 56	2,709 58	48,149 14	53,773 70	5,624 56
Tuolumne -----	14,859 96	1,540 39	1,131 73	56 75	17,588 83	-----	17,588 83	20,602 13	3,013 30
Ventura -----	13,763 15	2,776 94	359 00	78 56	16,977 65	2,053 63	19,033 28	23,889 42	4,856 14
Yolo -----	33,738 46	4,850 08	1,186 71	752 75	42,528 00	971 50	43,499 50	49,474 52	5,975 02
Yuba -----	27,287 54	5,200 57	943 85	21 00	33,452 96	765 03	34,217 99	39,467 26	5,249 27
Totals -----	\$2,285,732 39	\$371,992 13	\$46,490 50	\$13,565 73	\$2,717,780 75	\$293,126 38	\$3,010,907 13	\$3,653,798 96	\$662,891 83

* In addition to this amount there should be added \$66,315 75 for expenses of June, paid in July.

† Less \$83,715 12, outstanding warrants, July 1st, 1878.

TABLE No. 4—Continued.

COUNTIES.	1878.					1879.				
	Cash drawn from unapportioned County Fund for County Institute.	Cash drawn from unapportioned County Fund for Board of Examination.	Cash drawn from unapportioned County Fund for postage, stationery, etc.	Total expenditures apportioned County Fund.	Cash drawn from unapportioned County Fund for County Institute.	Cash drawn from unapportioned County Fund for Board of Examination.	Cash drawn from unapportioned County Fund for postage, stationery, etc.	Total expenditures apportioned County Fund.		
Alameda	---	\$471 00	\$184 40	\$655 40	\$100 00	\$283 00	\$155 65	\$538 65		
Alpine	---	62 00	55 00	117 00	---	9 00	4 75	13 75		
Anamor	---	399 50	31 00	330 50	100 00	325 00	33 60	458 00		
Butte	---	215 00	65 00	380 00	100 00	142 00	66 00	308 00		
Calaveras	---	285 00	214 40	499 40	80 00	200 00	153 85	433 85		
Colusa	---	221 00	50 00	296 00	25 50	93 50	34 60	173 00		
Contra Costa	---	220 50	66 00	361 50	100 00	175 00	63 00	338 00		
Del Norte	---	165 75	2 00	167 75	---	90 30	10 75	101 05		
El Dorado	---	201 50	---	286 50	75 00	128 00	15 80	215 80		
Fresno	---	440 90	48 00	584 40	95 75	291 95	50 00	437 70		
Humboldt	---	261 90	56 50	418 40	91 75	204 15	59 00	354 85		
Inyo	---	17 50	17 50	---	---	---	---	---		
Kern	---	277 73	18 00	295 73	---	328 00	18 00	346 00		
Lake	---	225 29	28 00	286 79	10 00	133 50	25 25	168 75		
Lassen	---	140 00	20 00	160 00	---	150 00	20 00	170 00		
Los Angeles	---	343 00	614 97	1,057 97	100 00	264 00	127 00	491 00		
Marin	---	330 00	215 08	587 08	84 50	128 00	87 95	300 45		
Mariposa	---	169 00	54 25	293 25	89 00	65 00	60 25	214 25		
Mendocino	---	283 50	107 50	462 00	68 95	178 50	41 03	291 48		
Merced	---	211 00	36 10	342 60	100 00	124 50	27 00	251 50		
Modoc	---	218 00	237 85	237 85	---	154 20	17 30	171 50		
Mono	---	33 00	---	33 00	---	55 00	---	55 00		
Monterey	---	408 25	129 81	635 06	---	248 75	44 00	292 75		
Napa	---	300 00	49 00	449 00	100 00	241 70	82 48	424 18		
Nevada	---	214 00	108 50	422 50	53 00	128 00	75 55	259 55		
Placer	---	343 50	61 50	439 00	20 00	116 50	---	136 50		
Plumas	---	171 00	97 68	354 18	93 00	98 00	66 38	237 38		
Sacramento	---	460 00	331 00	891 00	100 00	200 00	182 65	482 65		
San Benito	---	232 00	77 25	309 25	47 00	164 00	72 00	283 00		
San Bernardino	---	193 50	78 80	297 30	100 00	146 75	68 66	315 41		
San Diego	---	82 00	14 75	180 75	57 50	85 00	8 75	151 25		

San Francisco	100 00	250 00	100 00	450 00	100 00	170 00	145 50	415 50
San Joaquin	100 00	325 75	78 25	504 00	100 00	427 50	57 40	584 90
San Luis Obispo	100 00	240 70	43 50	384 20	68 00	144 00	62 25	271 25
San Mateo	100 00	120 00	135 45	255 15	61 25	165 00	54 59	280 84
Santa Barbara	25 50	383 00	60 00	468 50	27 50	309 50	50 00	387 00
Santa Clara	60 00	213 00	66 45	279 45	89 00	222 00	56 80	307 80
Santa Cruz	60 00	258 00	46 00	364 00	100 00	160 00	38 25	198 25
Shasta	100 00	263 25	50 00	413 25	100 00	125 00	50 00	275 00
Sierra	100 00	192 00	38 00	330 00	100 00	96 00	59 00	255 00
Siskiyou	100 00	241 55	25 00	269 55	62 50	172 00	47 00	281 50
Solano	100 00	400 00	100 00	600 00	87 50	270 00	110 00	467 50
Stanislaus	100 00	200 00	45 05	345 05	11 25	196 75	47 25	208 00
Sutter	100 00	199 00	37 00	236 00	40 00	126 00	51 00	210 25
Tehama	100 00	249 50	153 00	502 50	77 00	184 75	14 00	312 75
Trinity	61 25	22 00	13 00	35 00	52 44	13 00	27 00	604 21
Tulare	100 00	450 80	106 50	618 55	115 50	211 52	334 25	604 21
Tuolumne	100 00	101 00	34 87	135 87	86 10	115 50	26 00	141 50
Ventura	100 00	241 00	137 46	378 46	100 00	137 00	22 75	243 85
Yolo	100 00	245 00	45 00	390 00	100 00	110 00	45 00	255 00
Yuba	55 00	209 57	35 00	299 57	31 75	185 20	36 00	255 95
Totals	\$2,519 15	\$11,324 34	\$1,121 70	\$7,632 60	\$2,932 31	\$7,459 02	\$3,002 49	\$14,479 43

TABLE No. 5.

Valuation of School Property—1878 and 1879.

COUNTIES.	1878.				1879.			
	Valuation of Lots, School Houses, and Furniture.	Valuation of School Libraries.	Valuation of School Apparatus.	Total Valuation of School Prop- erty.	Valuation of Lots, School Houses, and Furniture.	Valuation of School Libraries.	Valuation of School Apparatus.	Total Valuation of School Prop- erty.
Alameda-----	\$460,446 00	\$10,197 00	\$4,285 00	\$474,928 00	\$505,960 00	\$11,245 00	\$5,392 00	\$522,537 00
Alpine-----	625 00	148 00	125 00	898 00	825 00	249 00	45 00	1,119 00
Amador-----	24,405 00	2,427 00	645 00	27,477 00	30,640 00	2,390 00	1,087 00	34,117 00
Butte-----	107,965 00	5,370 00	2,900 00	116,235 00	119,150 00	5,715 00	2,085 00	127,550 00
Calaveras-----	24,610 00	1,770 00	1,400 00	27,780 00	24,610 00	1,770 00	1,400 00	27,780 00
Colusa-----	47,265 00	4,307 00	2,320 00	53,892 00	61,305 00	5,340 00	2,670 00	69,515 00
Contra Costa-----	64,805 00	5,800 00	2,430 00	73,035 00	66,810 00	6,465 00	2,454 00	75,669 00
Del Norte-----	4,475 00	675 00	250 00	5,400 00	2,600 00	856 00	255 00	3,711 00
El Dorado-----	30,253 00	5,811 00	1,788 00	37,852 00	30,463 00	5,356 00	1,892 00	37,911 00
Fresno-----	16,920 00	3,213 00	1,442 00	21,575 00	34,740 00	3,487 00	2,363 00	40,590 00
Humboldt-----	45,790 00	5,666 00	1,863 00	53,319 00	40,915 00	6,002 00	1,906 00	47,923 00
Inyo-----	9,927 00	911 00	688 00	11,526 00	9,100 00	1,051 00	507 00	10,658 00
Kern-----	28,762 00	1,418 00	582 00	30,762 00	32,833 00	1,557 00	1,125 00	35,515 00
Lake-----	22,895 00	2,825 00	915 00	26,635 00	24,316 00	3,087 00	1,117 00	28,520 00
Lassen-----	10,400 00	858 00	605 00	11,863 00	8,450 00	1,610 00	770 00	10,830 00
Los Angeles-----	188,725 00	10,222 00	3,315 00	202,262 00	207,250 00	9,987 00	3,135 00	220,372 00
Marin-----	38,700 00	5,050 00	983 00	44,733 00	38,966 00	5,703 00	1,071 00	45,740 00
Mariposa-----	9,843 00	2,010 00	910 00	12,763 00	8,930 00	2,119 00	945 00	11,994 00
Mendocino-----	46,158 00	6,025 00	3,108 00	55,291 00	47,547 00	5,947 00	3,294 00	56,788 00
Merced-----	47,900 00	2,814 00	1,146 00	51,860 00	24,390 00	3,041 00	785 00	28,216 00
Modoc-----	12,195 00	1,090 00	980 00	14,265 00	13,940 00	1,440 00	1,042 00	16,422 00
Mono-----	6,217 50	63 25	106 10	6,386 85	8,880 00	275 00	36 00	9,191 00
Monterey-----	48,419 00	5,268 00	1,221 00	54,908 00	44,845 00	6,119 00	1,581 00	52,545 00
Napa-----	83,145 00	6,726 00	2,381 00	92,252 00	84,669 00	6,655 00	2,656 00	94,010 00
Nevada-----	114,738 00	9,670 00	3,265 00	127,673 00	120,622 00	11,319 00	3,264 00	135,205 00
Placer-----	38,560 00	4,608 00	1,330 00	44,498 00	52,820 00	4,855 00	1,799 00	59,474 00

FUNDAS	11,943 00	2,109 00	1,117 00	20,223 00	10,905 00	21,149 00	983 00	20,959 00
Sacramento	271,880 00	10,240 00	2,863 00	284,983 00	281,795 00	8,006 00	4,162 00	293,963 00
San Benito	28,665 00	2,450 00	890 00	32,005 00	26,835 00	2,640 00	1,135 00	30,630 00
San Bernardino	25,105 00	4,360 00	812 00	30,277 00	29,578 00	4,520 00	1,195 00	35,293 00
San Diego	11,109 00	2,533 00	642 00	14,284 00	12,007 00	3,145 00	602 00	15,754 00
San Francisco	2,675,000 00	12,000 00	24,000 00	2,711,000 00	3,013,000 00	13,000 00	25,000 00	3,051,000 00
San Joaquin	230,775 00	11,095 00	3,650 00	245,520 00	235,463 00	12,945 00	4,370 00	252,778 00
San Luis Obispo	28,400 00	3,706 00	2,310 00	34,416 00	30,900 00	3,175 00	1,735 00	35,810 00
San Mateo	64,805 00	3,254 00	1,505 00	71,624 00	64,375 00	5,880 00	1,925 00	72,180 00
Santa Barbara	51,531 00	3,114 00	499 00	55,144 00	49,055 00	3,108 00	919 00	53,082 00
Santa Clara	308,285 00	12,220 00	5,985 00	326,490 00	332,697 00	13,191 00	7,901 00	353,789 00
Santa Cruz	84,900 00	3,831 00	1,125 00	91,576 00	86,375 00	6,178 00	1,340 00	94,493 00
Shasta	17,640 00	4,174 00	1,473 00	23,287 00	18,715 00	4,188 00	1,479 00	24,382 00
Sierra	15,250 00	2,300 00	1,345 00	18,895 00	14,900 00	2,775 00	815 00	18,490 00
Siskiyou	34,560 00	3,700 00	1,860 00	40,120 00	36,350 00	3,855 00	1,925 00	42,130 00
Solano	98,635 00	7,560 00	3,559 00	109,754 00	104,930 00	8,456 00	3,480 00	116,866 00
Sonoma	164,275 00	12,030 00	3,431 00	179,736 00	160,225 00	12,870 00	3,885 00	176,980 00
Stanislaus	52,261 00	4,250 00	1,730 00	58,241 00	45,590 00	4,780 00	1,145 00	51,315 00
Sutter	39,440 00	3,297 00	2,219 00	44,956 00	40,490 00	3,445 00	2,459 00	46,394 00
Tehama	38,180 00	3,083 00	1,123 00	42,388 00	39,325 00	3,820 00	1,398 00	44,543 00
Trinity	5,050 00	1,690 00	415 00	7,155 00	11,750 00	1,721 00	537 00	14,008 00
Tulare	42,620 00	5,738 00	1,931 00	50,319 00	27,647 00	3,416 00	2,743 00	53,806 00
Tuolumne	21,775 00	4,831 00	1,081 00	27,687 00	19,875 00	5,073 00	1,196 00	26,144 00
Ventura	27,125 00	1,930 00	405 00	29,460 00	28,970 00	2,154 00	380 00	31,474 00
Yolo	55,350 00	3,125 00	1,135 00	59,610 00	57,300 00	4,015 00	1,804 00	63,119 00
Yuba	46,474 00	5,096 00	2,179 00	53,749 00	46,900 00	5,600 00	2,505 00	55,005 00
Totals	\$5,990,276 50	\$242,676 25	\$110,417 10	\$6,343,369 85	\$6,477,028 00	\$258,045 00	\$122,316 00	\$6,557,389 00

TABLE No. 6.

Statement by counties of apportionment of Public School Fund for the school years ending June 30th, 1878 and 1879.

COUNTIES.	Semi-annual.		Total for 1878.	Semi-annual.		Total for 1879.
	August, 1877.	February, 1878.		August, 1878.	February, 1879.	
Alameda	\$16,725 33	\$82,288 64	\$99,013 97	\$13,146 16	\$77,034 72	\$90,200 85
Alpine	152 00	747 84	899 84	105 04	615 68	720 72
Amador	3,452 00	16,983 84	20,435 84	2,685 59	15,741 28	18,426 87
Butte	5,101 33	25,098 56	30,199 89	4,009 70	23,502 40	27,512 10
Calaveras	2,820 00	13,874 40	16,694 40	2,211 90	12,964 80	15,176 70
Colusa	3,600 00	17,712 00	21,312 00	2,814 87	16,499 04	19,313 91
Contra Costa	4,434 66	21,818 56	26,253 22	3,324 92	19,488 64	22,813 56
Del Norte	597 32	2,938 88	3,536 21	462 58	2,711 36	3,173 94
El Dorado	3,245 33	15,967 04	19,212 37	2,386 63	13,988 96	16,375 59
Fresno	2,518 66	12,391 84	14,910 50	2,083 63	12,212 96	14,296 59
Humboldt	4,752 00	23,379 84	28,131 84	3,764 27	22,063 84	25,828 11
Inyo	661 33	3,253 76	3,915 09	435 31	2,551 52	2,986 83
Kern	1,494 66	7,353 76	8,848 42	1,235 23	7,240 16	8,475 39
Lake	2,214 66	10,896 16	13,110 82	1,663 47	9,750 24	11,413 71
Lassen	969 33	4,769 12	5,738 45	843 35	4,943 20	5,786 55
Los Angeles	13,729 33	67,548 32	81,277 65	10,550 46	61,840 32	72,390 78
Marin	2,521 33	12,404 96	14,926 29	1,970 51	11,549 92	13,520 43
Mariposa	1,333 33	6,560 00	7,893 33	925 16	5,422 72	6,347 88
Mendocino	4,424 00	21,766 08	26,190 08	3,472 38	20,352 96	23,825 44
Merced	1,501 33	7,386 56	8,887 89	1,184 73	6,944 16	8,128 89
Modoc	1,228 00	6,041 76	7,269 76	997 88	5,848 96	6,846 84
Mono	221 33	1,088 96	1,310 29	237 35	1,391 20	1,628 55
Monterey	4,594 66	22,605 76	27,200 42	3,331 99	19,530 08	22,862 07
Napa	4,151 66	20,440 96	24,595 62	3,171 40	18,588 80	21,759 20
Nevada	6,757 33	33,246 08	40,003 41	5,099 49	29,890 08	34,989 57
Placer	3,740 00	18,400 80	22,140 80	2,867 39	16,806 88	19,674 27
Plumas	1,364 00	6,710 88	8,074 88	1,012 02	5,931 84	6,943 86
Sacramento	9,280 00	45,657 60	54,937 60	7,079 60	41,493 28	48,572 37
San Benito	1,980 00	9,741 60	11,721 60	1,563 48	9,164 16	10,727 64
San Bernardino	2,974 66	14,635 36	17,610 02	2,445 21	14,332 32	16,777 53
San Diego	2,257 33	11,106 48	13,363 41	1,697 81	9,951 52	11,649 33

San Francisco	70,946 66	349,057 60	420,004 26	56,457 99	330,922 08	387,380 07
San Joaquin	6,982 66	34,354 72	41,337 38	5,356 03	31,393 76	36,749 79
San Luis Obispo	3,414 66	16,800 16	20,214 82	2,651 25	15,540 00	18,191 25
San Mateo	3,361 33	16,537 16	19,898 49	2,440 16	14,302 72	16,742 88
Santa Barbara	3,692 00	18,164 64	21,856 64	2,870 42	16,824 64	19,695 06
Santa Clara	12,236 00	60,201 12	72,437 12	9,601 06	56,275 52	65,876 58
Santa Cruz	4,965 33	24,429 44	29,394 77	3,741 04	21,927 68	25,668 72
Shasta	2,250 66	11,073 28	13,323 94	1,965 46	11,320 32	13,485 78
Sierra	1,513 33	7,445 60	8,958 93	1,194 83	7,003 36	8,198 19
Siskiyou	2,404 00	12,122 88	14,586 88	1,914 96	11,224 32	13,139 28
Solano	6,101 33	30,018 56	36,119 89	4,607 62	27,007 04	31,614 66
Sonoma	10,108 00	49,731 36	59,839 36	7,606 31	44,583 52	52,189 83
Stanislaus	2,360 00	11,611 20	13,971 20	1,710 94	10,028 48	11,739 42
Sutter	2,094 66	10,305 76	12,400 42	1,628 12	9,543 84	11,171 96
Tehama	2,512 00	12,339 04	14,871 04	1,996 77	11,703 84	13,700 61
Trinity	908 00	4,467 36	5,375 36	708 01	4,149 92	4,857 93
Tulare	4,472 00	22,002 24	26,474 24	3,429 96	20,104 32	23,534 28
Tuolumne	2,397 33	11,794 88	14,192 21	1,824 06	10,691 52	12,515 58
Ventura	1,828 00	8,993 76	10,821 76	1,457 43	8,542 56	9,999 99
Yolo	4,061 33	19,981 76	24,033 09	3,056 26	17,913 92	20,970 18
Yuba	3,286 66	16,170 40	19,437 06	2,532 07	14,841 44	17,373 51
Totals	\$266,756 00	\$1,312,439 52	\$1,579,195 52	\$207,529 75	\$1,216,412 00	\$1,423,941 75

TABLE No. 7.

Statistical table, by years, showing the total expenditures for public schools in the State of California from 1852 to 1879, the assessable property of the State, and the percentage of expenditures on taxable property.

YEARS.	Assessed Value of Property.	YEARS.	Total Expenditures.	Rate per each \$100.
1850-1	\$57,670,689 00	1851-2	\$33,449 00	.0679
1851-2	49,231,052 00	1852-3	65,645 00	.1010
1852-3	64,579,375 00	1853-4	275,606 00	.2890
1853-4	95,335,616 00	1854-5	334,638 00	.3009
1854-5	111,191,630 00	1855-6	305,221 00	.2938
1855-6	103,887,193 55	1856-7	307,832 00	.3240
1856-7	95,007,140 97	1857-8	339,914 00	.2696
1857-8	126,059,461 82	1859	427,003 00	.3444
1858-9	123,955,877 00	1860	474,263 00	.3618
1859-60	131,060,279 49	1861	470,113 00	.3172
1860-1	148,193,510 02	1862	441,228 00	.2985
1861-2	147,811,617 16	1863	483,407 00	.3014
1862-3	160,369,071 81	1864	655,198 00	.3763
1863-4	174,101,955 07	1865	883,116 00	.4893
1864-5	180,484,949 85	1866	859,229 00	.4680
1865-6	183,509,161 00	1867	1,163,348 00	.5816
1866-7	200,764,132 50	1868	1,151,407 00	.5255
1867-8	212,205,339 01	1869	1,290,585 00	.5418
1868-9	237,183,175 07	1870	1,529,047 00	.5868
1869-70	260,563,886 08	1871	1,713,431 00	.6572
1870-1	277,538,134 97	1872	1,881,333 00	.7001
1871-2	267,868,126 76	1873	2,113,356 00	.3321
1872-3	637,232,823 31	1874	2,111,155 33	.3992
1873-4	528,747,043 00	1875	2,658,241 34	.4347
1874-5	611,495,197 00	1876	2,858,600 98	.4827
1875-6	594,230,621 00	1877	2,749,729 46	.4684
1876-7	586,980,107 00	1878	3,155,815 27	.5377
1877-8	586,953,022 00	1879	3,010,907 13	.5157
1878-9	584,578,036 00			

TABLE No. 8.

Statement, by years, showing the total amount of receipts and expenditures for public schools of the State of California, from 1852 to 1859, inclusive.

YEARS.	Total Amount of State School Fund Appropriated.	Total Amount Raised by County and City Taxes.	Total Amount Raised from Other Sources.	Total Amount Paid for Teachers' Salaries.	Total Amount Paid for School Houses and Sites.	Total Amount Expended for School Purposes.
1852	-----	-----	82,417 00	820,707 00	89,775 00	533,449 00
1853	-----	-----	10,626 00	47,894 00	6,193 00	65,615 00
1854	-----	\$157,702 00	42,557 00	85,860 00	129,677 00	275,606 00
1855	65,662 00	119,128 00	39,395 00	181,906 00	76,525 00	334,638 00
1856	69,961 00	121,639 00	28,619 00	200,941 00	52,484 00	305,221 00
1857	78,057 60	148,989 00	55,035 00	192,613 00	59,743 00	307,832 00
1858	53,405 00	162,870 00	85,107 00	204,545 00	88,199 00	339,914 00
1859	72,319 00	205,196 00	97,534 00	256,777 00	90,266 00	427,003 00
1860	81,118 00	230,514 00	122,858 00	311,165 00	110,352 00	474,263 00
1861	81,461 00	241,861 00	114,397 00	311,501 00	101,818 00	470,113 00
1862	75,412 00	294,828 00	141,806 00	330,249 00	49,274 00	441,238 00
1863	145,587 00	328,574 00	68,209 00	328,338 00	93,931 00	483,407 00
1864	132,217 00	260,842 00	84,084 00	411,101 00	167,393 00	656,198 00
1865	168,828 00	390,306 00	91,181 00	526,585 00	237,804 00	883,116 00
1866	132,410 00	470,668 00	79,600 00	551,462 00	185,056 00	859,229 00
1867	268,910 00	595,718 00	81,966 00	696,110 00	238,010 00	1,163,348 00
1868	252,603 00	654,758 00	73,986 00	763,639 00	221,118 00	1,151,407 00
1869	290,796 00	847,229 00	66,531 00	873,814 00	205,766 00	1,299,585 00
1870	360,447 00	839,756 00	63,441 00	976,938 00	339,362 00	1,529,047 00
1871	423,853 00	923,899 00	46,660 00	1,103,125 00	390,158 00	1,713,431 00
1872	424,022 00	1,249,943 00	232,075 00	1,282,799 00	290,119 00	1,881,233 00
1873	430,220 00	1,541,597 00	310,502 00	1,424,367 00	374,069 00	2,113,556 00
1874	428,414 12	1,332,208 82	345,316 95	1,560,830 00	192,467 00	2,111,155 00
1875	1,212,252 03	1,415,530 06	676,259 61	1,810,480 00	421,279 00	2,658,241 00
1876	1,317,603 84	1,240,657 31	158,206 40	1,938,939 96	440,706 37	2,858,600 98
1877	1,474,600 26	1,486,233 73	137,100 31	2,149,435 70	147,426 43	2,749,729 46
1878	1,579,195 52	1,393,014 96	106,396 84	2,272,554 19	390,094 92	3,155,815 27
1879	1,423,941 75	1,446,852 04	92,832 41	2,285,732 39	293,125 38	3,010,307 13

TABLE No. 9.

Statistical summary, by years, of the public schools of California, from 1851 to 1879, inclusive.

YEARS.	Number of Children Listed by Census Marshals.	Number of Children Enrolled on School Register.	Average Daily Attendance.	Number of Schools.	Number of Teachers.	Number of Children under Five Years of Age.	Number of Consuls Children in Private Schools.
1851	5,906	1,846	---	49	---	---	---
1852	17,821	3,214	---	20	---	---	---
1853	19,442	4,193	2,020	111	---	---	---
1854	20,075	9,746	4,635	168	214	---	---
1855	26,077	26,077	6,442	227	301	---	---
1856	30,039	30,039	8,495	321	392	---	---
1857	35,722	35,722	9,717	368	486	---	---
1858	40,530	40,530	11,183	432	517	23,538	---
1859	48,676	48,676	13,364	523	744	28,300	---
1860	57,917	57,917	14,754	593	851	30,932	5,438
1861	68,395	68,395	17,804	684	932	35,554	6,306
1862	71,821	71,821	19,262	715	982	38,127	6,886
1863	78,055	78,055	19,992	754	919	39,081	9,158
1864	86,031	86,031	24,794	832	1,079	41,323	11,339
1865	95,067	95,067	29,392	947	1,155	42,733	12,478
1866	84,179	84,179	---	913	1,268	52,037	15,671
1867	94,213	94,213	---	1,083	1,389	52,975	14,026
1868	104,118	104,118	43,681	1,228	1,590	58,119	14,820
1869	112,743	112,743	49,802	1,354	1,687	57,983	16,273
1870	121,751	121,751	54,271	1,492	1,869	62,940	16,198
1871	130,116	130,116	61,286	1,550	2,032	66,292	15,524
1872	137,351	137,351	65,700	1,654	2,301	69,723	13,787
1873	141,610	141,610	69,461	1,868	2,336	70,086	12,507
1874	159,717	159,717	72,283	2,005	2,432	74,876	14,149
1875	171,563	171,563	78,027	2,190	2,693	78,650	15,021
1876	184,787	184,787	83,391	2,336	2,894	83,395	14,625
1877	200,067	200,067	89,339	2,485	3,077	88,951	15,344
1878	205,475	205,475	94,696	2,378	3,293	85,061	15,310
1879	216,404	216,404	95,468	2,743	3,453	86,633	15,432

TABLE No. 10.

*Condition of the School Fund for the 29th and 30th fiscal years.**Debits.*

June 29, 1878—To warrants issued to County Treasurers-----	\$1,571,485 89
June 29, 1878—To balance-----	164,604 18
	<hr/>
	\$1,736,090 07
June 30, 1879—To warrants issued-----	\$1,426,703 35
June 30, 1879—To balance-----	190,280 24
	<hr/>
	\$1,616,983 59

Credits.

July 1, 1877—By balance-----	\$220,049 95
July 10, 1877—By sale of Geological Survey Reports-----	90 40
June 29, 1878—By interest on bonds-----	121,591 50
June 29, 1878—By receipts from counties-----	1,394,358 22
	<hr/>
	\$1,736,090 07
July 1, 1878—By balance-----	\$164,604 18
June 30, 1879—By sale of Geological Survey Reports-----	310 25
June 30, 1879—By interest on bonds-----	124,894 70
June 30, 1879—By receipts from counties-----	1,327,174 46
	<hr/>
	\$1,616,983 59
July 1, 1879—By balance-----	\$190,280 24

*State School Land Fund.**Debits.*

July 29, 1878—To warrants issued-----	\$80,515 42
July 29, 1878—To balance-----	69,194 70
	<hr/>
	\$149,710 12
June 30, 1879—To warrants issued-----	\$105,024 93
June 30, 1879—To balance-----	37,552 91
	<hr/>
	\$142,577 84

Credits.

July 1, 1877—By balance-----	\$68,064 16
June 29, 1878—By warrants canceled-----	804 95
June 29, 1878—By receipts from counties-----	80,841 01
	<hr/>
	\$149,710 12
July 1, 1878—By balance-----	\$69,194 70
June 30, 1879—By receipts from counties-----	73,383 14
	<hr/>
	\$142,577 84
July 1, 1879—By balance-----	\$37,552 91

TABLE No. 11.

Statement of bonds held in trust by the State Treasurer for the School Fund, June 30th, 1879.

SERIES.	Amount.
State Capitol Bonds of 1870, 7 per cent.	\$236,000 00
State Capitol Bonds of 1872, 7 per cent.	115,000 00
Bonds of 1873, 6 per cent.	1,386,500 00
Humboldt County Bonds, 9 per cent.	25,000 00
Lake County Bonds, 7 per cent.	11,400 00
Mendocino County Bonds, 8 per cent.	10,000 00
San Joaquin County Bonds, 10 per cent.	5,000 00
San Luis Obispo County Bonds, 8 per cent.	40,000 00
San Luis Obispo County Bonds, 10 per cent.	10,000 00
Santa Barbara County Bonds, 10 per cent.	20,000 00
Tehama County Bonds, 8 per cent.	11,500 00
Tulare County Bonds, 10 per cent.	20,000 00
Sacramento County Bonds, 6 per cent.	16,000 00
Santa Clara County Bonds, 7 per cent.	5,000 00
Sacramento County Bonds, 6 per cent.	10,400 00
Napa County Bonds, 7 per cent.	60,000 00
Solano County Bonds, 7 per cent.	10,000 00
San Luis Obispo County Bonds, 8 per cent.	10,000 00
Stanislaus County Bonds, 8 per cent.	10,000 00
Total	\$2,011,800 00

LIST OF HOLDERS OF DIPLOMAS AND STATE CERTIFICATES, IN FULL FORCE AND EFFECT, OCTOBER, 1, 1879.

LIFE DIPLOMAS.

NAMES.	When Issued.
Abbott, Charles S.	May 28, 1879.
Abbott, Warren	September 1, 1877.
Ackleson, Susan	September 1, 1877.
Adams, O. M.	March 13, 1879.
Aiken, Miss A. E.	March 13, 1879.
Ames, Martha	December 4, 1875.
Alderson, M. J.	July 23, 1878.
Aldrich, Abbie F.	April 22, 1876.
Allen, L. D.	November 25, 1869.
Allsop, J. P. C.	November 25, 1869.
Ames, Charles G.	November 25, 1869.
Anderson, Anna B.	September 11, 1877.
Anderson, Mrs. E. W.	May 28, 1879.
Anderson, Mrs. C. A.	November 28, 1873.
Anderson, George P.	May 28, 1879.
Anderson, J. W.	December 15, 1868.
Anderson, W. H.	May 5, 1877.
Armstrong, Flora E.	March 28, 1878.
Arnick, Daniel B.	September 29, 1879.
Ashbrook, T. P.	May 5, 1877.
Ashley, Ella E.	September 29, 1879.
Atwood, Mrs. C. L.	November 20, 1867.
Atwood, Mrs. N. J.	May 5, 1877.
Augustine, S. M.	June 23, 1878.
Austin, Miss Minnie T.	December 27, 1866.
Babeock, H. C.	July 23, 1878.
Babeock, W. D.	January 29, 1876.
Badgley, O. E.	July 23, 1878.
Bagnall, John	November 29, 1867.
Bailey, C. P.	December 15, 1868.
Baker, George F.	June 21, 1873.
Baldwin, Miss Nettie	January 5, 1875.
Bangs, Vital E.	October 26, 1877.
Barbour, A. C.	March 28, 1878.
Barker, Orie	September 24, 1878.
Barkly, J. G.	March 13, 1879.
Barnes, Eliza B.	March 28, 1878.
Barr, Miss Sarah A.	November 28, 1873.
Barry, Charlotte M.	October 26, 1877.
Bassett, Jennie A.	May 5, 1877.
Batchelder, H. T.	November 28, 1873.
Bateman, J. K.	May 28, 1879.
Bateman, J. M. K.	May 28, 1879.
Baumgarten, Miss E. M.	April 22, 1876.
Beal, C. R.	March 13, 1879.
Beals, Mrs. C. R.	June 3, 1872.
Beamer, Emma	September 1, 1877.
Beebe, Sarah M.	March 13, 1879.
Benjamin, C. V.	June 3, 1872.
Betancue, Miss L. C.	March 13, 1879.
Bengaugh, Eliza	March 13, 1879.
Bennett, Glora T.	March 13, 1879.
Bennett, Miss Mary E.	May 28, 1879.
Bennett, Miss Mary H.	June 22, 1872.
Bennett, Fannie E.	1869.
Bentley, Lettie E.	March 28, 1877.
Bernard, Miss A. S.	January 5, 1875.

LIFE DIPLOMAS—Continued.

NAMES.	When Issued.
Berry, J. E.	March 13, 1879.
Benn, Rachel R.	September 29, 1879.
Bills, Miss R. A.	May 28, 1879.
Black, Samuel T.	December 13, 1872.
Blackwood, Mrs. P. J.	September 24, 1878.
Blakely, James O.	October 26, 1877.
Blake, Charles M.	June 24, 1874.
Blanchard, J. E.	July 23, 1878.
Bloomer, A. C.	January 29, 1876.
Boardman, O. F.	September 29, 1879.
Bodkin, John H.	July 23, 1878.
Bodwell, Miss Mary L.	December 27, 1866.
Boniface, Miss Sarah	September 29, 1879.
Bonner, W. G.	September 1, 1877.
Boschen, Seraphine	March 13, 1879.
Boynnton, Kate H.	March 28, 1878.
Boynnton, S. S.	September 1, 1877.
Braddock, David W.	March 13, 1879.
Bradley, Mrs. C. P.	October 26, 1877.
Bradley, Theodore	December 27, 1876.
Brackett, Ella L.	November 11, 1876.
Bragdon, H. H.	July 23, 1878.
Bragg, Mary J.	December 4, 1875.
Braly, John H.	November 25, 1869.
Bray, W. F.	September 29, 1879.
Brier, Kirk W.	March 28, 1878.
Brigham, Julia	September 1, 1877.
Brodt, A. W.	March 14, 1871.
Brook, Henry C.	May 28, 1879.
Brooks, E. R.	September 24, 1878.
Brooks, Elisha	September 24, 1878.
Brophy, M. C.	May 5, 1877.
Brown, A. G.	May 5, 1877.
Brown, B. L.	March 28, 1878.
Brown, F. R.	July 5, 1867.
Brown, George	December 27, 1866.
Brown, G. J.	November 11, 1876.
Brown, James B.	November 11, 1876.
Brown, Julia B.	May 5, 1877.
Brown, L. L.	September 24, 1878.
Brunley, Miss M. J.	July 23, 1878.
Brown, N. H.	September 29, 1879.
Brown, Miss S. L.	June 22, 1874.
Brierly, John R.	January 29, 1876.
Buckman, Miss C. T.	September 24, 1878.
Buckman, F. F. S.	June 1, 1875.
Bugbey, Mrs. B. N.	January 29, 1876.
Bulfinch, S. A.	September 29, 1879.
Bull, Mary D.	March 28, 1878.
Bunueli, George W.	December 27, 1866.
Burch, Samuel N.	May 28, 1879.
Burke, Jennie	May 28, 1879.
Burke, Lizzie K.	November 28, 1873.
Bush, Mrs. E. A.	September 29, 1879.
Butler, R. D.	May 28, 1879.
Byrod, Sarah J.	May 5, 1877.
Caldwell, Mrs. M. E.	March 28, 1878.
Call, Mattie C.	November 11, 1876.
Campbell, Miss Amelia	May 28, 1879.
Campbell, Miss A. T.	November 11, 1876.
Campbell, Miss C. C.	December 13, 1877.
Campbell, E. S.	March 13, 1879.
Campbell, F. M.	November 28, 1873.
Carlisle, Mrs. E. M.	March 13, 1879.
Carlton, H. P.	June 8, 1866.
Carmichael, P. J.	March 28, 1878.

LIFE DIPLOMAS—Continued.

NAMES.	When Issued.
Carpenter, Miss A. O.	March 28, 1878.
Carr, Ezra S.	May 5, 1877.
Carr, Francis	March 28, 1878.
Carr, J. E.	September 29, 1879.
Casebolt, Miss M. A.	June 3, 1872.
Castlehun, Miss Maria A.	June 22, 1874.
Casterlin, J. B.	July 23, 1878.
Casterlin, Mrs. M. A.	July 23, 1878.
Case, E. L.	March 13, 1879.
Cate, H. W.	March 13, 1879.
Chadwick, A. M.	September 24, 1878.
Chalmers, Annie B.	January 5, 1875.
Chamberlain, Annie E.	March 13, 1879.
Chapman, Annie B.	June 3, 1872.
Chapin, F. W.	May 28, 1879.
Chestnut, J. G.	September 29, 1879.
Chestnutwood, John A.	February 17, 1873.
Chestnutwood, Mrs. J. A.	December 4, 1875.
Childs, C. W.	May 27, 1868.
Childs, Katie B.	September 24, 1878.
Chipman, L. J.	May 5, 1877.
Ciprico, Anita	May 5, 1877.
Clapp, Mrs. L. K.	December 15, 1868.
Clark, Doreas	November 29, 1867.
Clark, Mrs. H. M.	December 27, 1866.
Clark, L. R.	July 12, 1870.
Clark, Mary E.	November 29, 1867.
Clark, M. C.	June 1, 1875.
Clark, Mrs. S. A.	May 28, 1879.
Clark, W. J.	October 26, 1877.
Clement, Charles H.	March 28, 1878.
Cleveland, Miss E. A.	June 3, 1873.
Code, Mrs. E. S.	September 29, 1879.
Coé, Eli G.	March 4, 1871.
Colby, Mrs. M. A.	September 29, 1879.
Cole, Mrs. Frances.	March 28, 1878.
Coleman, Mrs. D. M.	October 26, 1877.
Collier, Mrs. J. W.	September 1, 1877.
Conklin, E. B.	March 4, 1871.
Connolly, John J.	September 24, 1878.
Cook, Miss Hannah	November 28, 1873.
Cook, Mrs. P.	March 29, 1870.
Cooper, C. A.	March 13, 1879.
Cooper, Mrs. Frances A.	March 28, 1878.
Cornelius, L. E.	March 28, 1878.
Cory, Amelia A.	September 24, 1878.
Cottle, Melville	May 21, 1869.
Cowdrey, William A.	March 13, 1879.
Cox, Kate M.	September 1, 1877.
Crane, Amanda	April 22, 1876.
Crane, Ellis T.	September 29, 1879.
Crane, George	March 28, 1878.
Cranz, Sophia	March 28, 1878.
Crawford, Alonzo	May 28, 1879.
Crawford, Mrs. J. T.	June 22, 1874.
Crawford, T. O.	December 4, 1875.
Craben, Andrew F.	June 22, 1874.
Craven, Nettie R.	March 13, 1879.
Cressey, E. M.	October 26, 1877.
Cressey, W. E.	March 28, 1878.
Crichton, Mrs. A. M.	September 29, 1879.
Crook, W. C.	March 13, 1879.
Cross, C. W.	January 5, 1875.
Crossett, F. M.	January 29, 1876.
Crothers, M. I.	March 28, 1878.
Crowell, C. H.	February 17, 1873.

LIFE DIPLOMAS—Continued.

NAMES.	When Issued.
Crowhurst, Wm.	June 1, 187
Cummings, C. C.	December 27, 186
Cummings, E. C.	March 28, 187
Curtis, H. C.	September 1, 187
Curtis, Louis F.	September 29, 187
D'Arcy, Miss M. E.	December 13, 187
Daniels, Mrs. S. B.	September 24, 187
Darke, F. E.	September 24, 187
Darby, R. R.	July 23, 187
Dashields, Fred. S.	March 13, 187
David, Mrs. Alice	October 26, 187
Davidson, Nannie	March 13, 187
Davidson, R. P.	October 26, 187
Davis, E. W.	March 13, 187
Davis, Imogene W.	January 5, 187
Davis, J. T.	April 22, 187
Day, F. H.	March 13, 187
Deane, Mrs. M.	June 13, 187
Deetkin, Mrs. Lizzie G.	June 22, 187
Delay, D. J.	May 28, 187
De Mandran, F. V. C.	July 23, 187
Demick, Ruth M.	September 29, 187
Denman, James	December 27, 186
De Nure, D. D.	May 28, 187
De Pancier, S. F.	July 23, 187
Deuel, Mrs. Harriet	May 28, 187
Dickenson, Maria T.	September 24, 187
Dickson, Bessie	March 13, 187
Dickson, Regina M.	September 29, 187
Dodge, W. C.	June 22, 187
Dooner, John	January 5, 187
Doty, James M.	May 29, 187
Dozier, Melville	March 28, 187
Drake, A. J.	March 14, 187
Drake, Charles M.	January 29, 187
Duane, Mrs. A. S.	June 3, 187
DuBois, C. G.	July 23, 187
DuBois, Mrs. A. E.	December 15, 186
DuBois, J. B.	January 29, 187
Duenkle, Wm.	December 4, 187
Dunbar, Nannie S.	November 11, 187
Dunbar, S. G. S.	November 11, 187
Dunbar, Vilette J.	May 5, 187
Duncan, Annie	May 5, 187
Duncan, Elizabeth	May 5, 187
Eiekhoff, J. Henry	November 28, 187
Elkins, Achia E.	March 28, 187
Elliott, Mary E.	July 23, 187
Elliott, Kate	September 29, 187
Ellis, Carrie M.	November 14, 187
Ellis, Miss M. C.	September 1, 187
Emory, Cordelia	July 23, 187
Entrican, Mrs. D. O.	September 29, 187
Farehild, H. M.	May 5, 187
Faith, C. E.	March 28, 187
Fallon, J. K.	September 1, 187
Farley, A. J.	December 13, 187
Featherly, Miss H.	September 24, 187
Fellers, Lorenzo	May 5, 187
Felts, J. M.	September 1, 187
Fenton, H. W.	May 5, 187
Fields, Miss Carrie P.	June 1, 187
Finch, J. B.	November 1, 187
Finch, Augusta P.	December 4, 187
Fisk, Julia A.	January 29, 187
Fisher, Kate B.	March 28, 187

LIFE DIPLOMAS—Continued.

NAMES.	When Issued.
Fitzgerald, A. L.	November 11, 1871.
McInt, Almira	November 11, 1876.
Lloyd, E. F.	March 13, 1879.
Lloyd, May E.	March 13, 1879.
Alger, Sarah J.	May 5, 1877.
Landa, Chas. E.	May 5, 1877.
Lord, F. W.	September 29, 1879.
Lord, James A.	May 28, 1879.
Luss, Benjamin R.	March 28, 1878.
Luss, Wm. F.	May 28, 1879.
Lotman, Henry E.	May 28, 1879.
Loster, Mrs. J. A.	November 28, 1873.
Lowler, B. F.	November 11, 1877.
Lowler, Laura T.	December 15, 1868.
Lreeman, G. N.	January 5, 1875.
Lench, Miss Mary F.	May 28, 1879.
Lench, Miss Sarah T.	May 28, 1879.
Ly, W. N.	December 13, 1872.
Miller, A. L.	November 25, 1869.
Mrlong, George	January 29, 1876.
Mbril, Mrs. C. E.	June 22, 1874.
Mge, M. D.	March 28, 1878.
Mlusha, N. H.	July 23, 1878.
Mumble, John	July 23, 1878.
Mrliek, J. P.	March 28, 1878.
Marrison, Gazena	January 29, 1876.
Mates, Freeman	December 13, 1872.
Mates, Mrs. S. B.	September 1, 1877.
Marlin, Paul A.	November 1, 1876.
Merman, Carrie	March 28, 1878.
Mibson, J. C.	September 1, 1877.
Mliddon, R. J.	March 28, 1878.
Moyn, J. W.	September 29, 1879.
Moyn, T. J.	July 23, 1878.
Moldsmitth, Esther	October 26, 1877.
Morman, W. J.	February 17, 1873.
Morman, J. B.	September 29, 1879.
Moodsrich, A. H.	June 20, 1868.
Mordon, Mrs. E. A.	March 13, 1879.
Moultry, Miss Jennie	September 1, 1877.
Macey, Robert	September 29, 1879.
Mrof, Miss Minnie	December 13, 1872.
Mrauger, W. N.	May 2, 1868.
Mrainger, W. C.	July 23, 1878.
Mrancy, Miss Maggie	May 28, 1879.
Mraut, Miss Ella G.	January 5, 1875.
Mraut, Miss Helen A.	June 5, 1875.
Mraves, O. E.	May 28, 1879.
Mraay, Miss A. L.	September 1, 1877.
Mraay, John C.	May 21, 1869.
Mregg, Alice C.	September 24, 1878.
Mreer, Miss Jane E.	June 1, 1875.
Mriffin, Miss Aurelia	March 14, 1874.
Mriffin, Charles R.	September 1, 1877.
Mriffin, Lizzie	March 28, 1878.
Mriffin, Martha E.	September 1, 1877.
Mruinn, James M.	November 11, 1871.
Mturney, Benjamin	July 23, 1878.
Mtagen, Miss Louise C.	May 28, 1879.
Mtager, Charles R.	September 29, 1879.
Maile, Cornelia	March 28, 1878.
Mailey, W. T.	September 1, 1877.
Maill, Miss Frances M.	April 22, 1876.
Maill, George C.	October 26, 1877.
Maill, Maggie J.	March 28, 1878.
Maill, Mary Ward	July 23, 1878.

LIFE DIPLOMAS—Continued.

NAMES.	When Issued.
Ham, Charles H.	July 23, 1878
Hamill, Amelia H.	September 24, 1878
Hamilton, Miss Addie	November 28, 1873
Hamilton, Hiram	March 13, 1879
Hamilton, H. M.	March 13, 1879
Hamilton, M. J.	September 29, 1879
Hammond, Josiah Shaw	November 28, 1873
Hapgood, Mrs. Emma	September 1, 1877
Hardy, Miss Irene	July 23, 1878
Harrison, Miss Ella	July 23, 1878
Hartson, Lola	May 28, 1879
Hart, W. C.	February 17, 1873
Hart, Mrs. M. C.	May 28, 1879
Harvey, O. T.	September 29, 1879
Hatch, Florence E.	July 23, 1878
Hatch, Junius L.	December 4, 1875
Hatton, Julia A.	July 23, 1878
Havens, Carrie	May 5, 1877
Hauck, Julia L.	May 28, 1879
Hayes, John	January 29, 1876
Hayes, Mrs. A. M. W.	September 1, 1877
Hayman, John E.	September 29, 1879
Hazen, P. J.	March 28, 1878
Heard, Miss Sue V.	May 28, 1879
Heath, H. H.	May 28, 1879
Hemenway, Maria M.	July 23, 1878
Heckman, W. H. H.	July 23, 1878
Henderson, W. H.	September 29, 1879
Heney, Julia	May 28, 1879
Henning, David F.	September 24, 1878
Henning, Irvin P.	June 1, 1875
Herbst, A.	February 17, 1873
Hewitt, Roscoe E.	May 5, 1877
Higby, H. C.	June 1, 1875
Higgins, B. F.	September 29, 1879
Hill, Mrs. A. H.	February 17, 1873
Hill, Whitman H.	March 14, 1871
Hilton, Emma H.	September 29, 1879
Hilton, Stephen	May 5, 1877
Hinckley, Mrs. Elizabeth	September 29, 1879
Hinton, J. W.	July 23, 1878
Hitchcock, L. V.	March 13, 1879
Hobbs, W. H.	March 13, 1879
Hodgdon, Miss S. G.	December 13, 1872
Hodgkins, Mary A.	May 28, 1879
Hoffman, Mrs. Mary L.	November 28, 1873
Hogan, Miss M. J.	May 5, 1877
Hoitt, Ira G.	December 27, 1866
Holbrook, Miss Nellie	May 28, 1876
Holbrook, T. M. J.	December 27, 1866
Holder, W. W.	November 11, 1871
Hollenbeck, Mrs. B. L.	September 24, 1878
Holmes, Alvira	December 27, 1866
Holmes, Ida M.	September 1, 1877
Holmes, Ellis H.	December 17, 1866
Holton, Abba L.	May 5, 1877
Horton, G. W.	May 5, 1877
Houchins, Samuel	September 29, 1879
Houghton, Mrs. E. W.	December 27, 1866
Houghton, Geo. E.	April 22, 1876
Howe, Converse	June 1, 1875
Howe, J. M.	September 24, 1867
Howe, H. H.	May 27, 1868
Howe, N. P.	July 23, 1878
Howell, S. S.	September 1, 1877
Howard, Benjamin	March 13, 1879

LIFE DIPLOMAS—Continued.

NAMES.	When Issued.
oyt, H. E.	March 13, 1879.
oyt, Mrs. L. M.	March 28, 1878.
uchs, Annie E.	January 5, 1875.
udson, J. A.	February 17, 1873.
uff, Mrs. Mary B.	July 23, 1878.
ughes, A. B.	May 5, 1877.
umphry, E. D.	May 27, 1868.
umphry, Miss L. A.	June 27, 1874.
umphry, Miss M. A.	June 22, 1874.
umphrys, Mrs. M. S.	May 28, 1879.
unt, B. E.	November 11, 1876.
unt, Carrie L.	March 9, 1870.
unt, Mrs. E. G.	March 13, 1879.
unt, Mrs. M. C.	May 28, 1879.
utton, Mrs. Lucy M.	September 1, 1877.
unter, John	March 28, 1878.
untinger, Virginia M.	March 28, 1878.
urley, Miss J. M. A.	November 28, 1873.
utton, Chas. E.	November 28, 1873.
ingham, Oscar S.	March 13, 1879.
ngraham, Duncan G.	July 23, 1878.
nskip, Philip	May 28, 1879.
saman, S. G.	May 28, 1879.
tsell, A. J.	June 22, 1874.
ackman, Ann M.	March 28, 1878.
ackman, Samuel H.	May 9, 1870.
auvier, Allen E.	September 29, 1879.
efferson, Dora	September 29, 1879.
enks, D. W.	May 5, 1877.
essup, Miss S. A.	December 13, 1872.
ewett, Miss Annie	April 22, 1876.
ewett, Fidelity	March 28, 1878.
ewett, Miss Susan N.	June 3, 1872.
ohns, Charles T.	November 11, 1871.
ohns, Anna Z.	March 28, 1878.
ohns, Charles T.	January 29, 1876.
ohnson, G. W.	September 29, 1879.
ohnson, J. M.	January 29, 1876.
ohnson, J. G.	March 29, 1870.
Johnstone, Mrs. R. R.	March 28, 1878.
Jones, George W.	November 11, 1871.
Jones, J. Thurston	December 4, 1875.
Jones, Miss Sarah	May 28, 1879.
Jordan, John F.	October 26, 1877.
Kane, Richard	May 5, 1877.
Keegan, Miss Mary A.	December 4, 1875.
Kendall, Mrs. C. S.	October 26, 1877.
Kelso, John R.	April 26, 1876.
Kelton, Mrs. M. A.	March 13, 1876.
Kennedy, J. T.	November 11, 1876.
Kennedy, Kate	November 11, 1876.
Kennedy, J. G.	November 11, 1871.
Kennedy, Thomas E.	May 28, 1879.
Kennedy, W. W.	November 11, 1871.
Kent, Isabella	May 5, 1877.
Kent, W. F.	March 13, 1879.
Kercheval, Jennie G.	November 25, 1869.
Keran, A. P.	September 29, 1879.
Keran, J. N.	September 29, 1879.
Kerr, A. W.	September 29, 1879.
Kidder, Mrs. Sophia	March 28, 1878.
Kilpatrick, E. C.	September 29, 1879.
Kimball, C. H.	September 1, 1877.
King, Florella	July 23, 1878.
Kincaid, Mary N.	June 29, 1876.
Kingman, Miss Mary V.	December 4, 1875.

LIFE DIPLOMAS—Continued.

NAMES.	When Issued.
Kinkade, Letitia	November 11, 1876.
Kinne, H. C.	June 3, 1872.
Kirch, Lizzie C.	March 28, 1878.
Kirk, T. J.	May 28, 1879.
Kirkpatrick, J. M.	November 25, 1869.
Klench, T. J.	November 11, 1876.
Knight, D. S.	September 24, 1878.
Knowlton, Ebenezer	December 27, 1866.
Knowlton, E. L.	September 1, 1877.
Kratzer, Lella	May 5, 1877.
Lafferty, J. M.	May 5, 1877.
Laird, Maria E.	September 24, 1878.
Lamb, Miss Irene	November 28, 1873.
Landes, F. L.	November 11, 1876.
Lanfranchi, Mrs. C.	March 28, 1878.
Leadbeater, W. R.	July 12, 1870.
Leggett, Joseph	June 3, 1872.
Lehan, M. S.	July 23, 1878.
Leonard, T. C.	December 27, 1866.
Levinson, Miss Rosa	June 3, 1872.
Levy, Daniel	November 28, 1873.
Lewis, Clelia M.	May 5, 1877.
Libby, Mrs. Josephine	July 23, 1878.
Lichtenthaler, Miss Mary	July 23, 1878.
Lighthall, G. E.	March 14, 1875.
Lillie, John B.	December 4, 1875.
Lillie, Mrs. S. P.	March 28, 1878.
Linseott, John W.	March 28, 1878.
Lipowitz, Max	December 4, 1875.
Little, Mary	March 13, 1879.
Little, Chida	May 28, 1879.
Littlefield, J. D.	December 27, 1866.
Lloyd, D. M.	September 29, 1879.
Lloyd, Julius	March 28, 1878.
Lloyd, Miss Mary A.	July 23, 1878.
Loomis, Miss Amanda	December 15, 1868.
Lindon, Jacques	January 29, 1876.
Loring, Mrs. M. W.	March 13, 1879.
Loufbourrow, E.	March 28, 1878.
Lovett, C. M.	January 5, 1876.
Lowe, Mrs. A.	September 1, 1877.
Lowe, Emma T.	September 29, 1879.
Lowell, John Marshall	July 23, 1878.
Lubeck, Mrs. Julia M.	January 5, 1875.
Lynch, Miss Frances	December 27, 1866.
Lynch, Tillie L.	March 13, 1879.
Lynch, W. F. B.	November 11, 1876.
Lyser, Albert	October 26, 1877.
Macdonald, Kate	July 23, 1878.
Mack, George C.	December 27, 1866.
Mack, George F.	September 24, 1878.
Magoon, W. H.	July 23, 1878.
Mackall, J. N.	December 13, 1872.
Makinney, H. E.	December 15, 1868.
Mann, Alonzo R.	November 29, 1867.
Manning, Miss Agnes M.	November 28, 1873.
Manzer, John	September 29, 1879.
Mareus, Mrs. Emma C.	July 23, 1878.
Maguire, Louise	September 29, 1879.
Mariner, R. K.	December 27, 1866.
Marks, Bernard	June 8, 1866.
Martin, A.	November 11, 1876.
Marsh, Mrs. S. W.	June 13, 1871.
Martling, J. A.	July 23, 1878.
Marston, C. E.	September 29, 1879.
Mason, W. H.	March 13, 1879.

LIFE DIPLOMAS—Continued.

NAMES.	When Issued.
Isaxwell, Walter	September 29, 1879.
Ishew, Mrs. H. A.	March 13, 1879.
IsArthur, Anna	May 5, 1877.
IsArthur, A. W.	May 28, 1879.
IsBride, H. E.	January 5, 1875.
IsCarthy, F. H.	November 11, 1876.
IsCarthy, A. F.	January 5, 1875.
IsClymonds, J. W.	September 29, 1879.
IsConnell, Harriet	September 29, 1879.
IsCormick, Miss Harriet	April 22, 1876.
IsCroskey, R. C.	July 23, 1878.
IsChesney, J. B.	July 5, 1867.
IsCulloch, H. E.	July 23, 1878.
IsDonald, A. H.	December 15, 1868.
IsDonald, Mrs. A. H.	January 5, 1875.
IsDonald, W. P.	January 5, 1875.
IsDowell, T. K.	September 29, 1879.
IsEwen, John H.	September 1, 1877.
IsFadden, John H.	January 5, 1875.
IsFadden, W. M.	March 14, 1876.
IsGlashen, C. F.	April 22, 1879.
IsHugh, Peter	March 13, 1879.
IsKenzie, Margaret	January 29, 1876.
IsKown, Mrs. M. E.	May 28, 1879.
IsMeans, A. C.	July 23, 1878.
IsMillan, J. C.	May 28, 1879.
IsPhail, J. S.	September 29, 1879.
IsPhee, B. T.	September 29, 1879.
IsPherson, Stephen	March 28, 1878.
IsPherson, W. G.	May 28, 1879.
IsPherson, Mrs. S. M.	September 29, 1879.
Isiek, Anna P.	September 29, 1879.
Iseginity, Mrs. M. P.	September 29, 1879.
Iselrose, Mary H.	September 29, 1879.
Isenefee, C. A.	November 11, 1871.
Isenges, Miss Carrie	July 23, 1878.
Iserritt, Julia	September 29, 1879.
Iservin, Charles E.	July 23, 1878.
Isetcalf, Mary F.	March 28, 1878.
Isiehener, Mary E.	July 23, 1878.
Isiddleton, Miss Eliza	June 1, 1875.
Isiles, Mrs. S. A.	March 28, 1878.
Isillette, Percival C.	March 14, 1871.
Isiller, Miss Emma J.	July 23, 1878.
Isiller, Miss H. J.	September 1, 1877.
Isiller, Lafayette	May 5, 1877.
Isiller, Ora E.	November 28, 1873.
Isiller, Sarah E.	May 5, 1877.
Isilliken, Ellen A.	November 28, 1873.
Isinns, George W.	June 8, 1866.
Isontgomery, Annie C.	May 28, 1879.
Isore, Anna J.	October 26, 1877.
Isore, Mrs. Mary B.	December 4, 1875.
Isore, Ira	September 1, 1877.
Isorford, S. O.	September 29, 1879.
Isorgan, Mrs. L. A.	December 13, 1872.
Isorgan, Rose E.	September 1, 1877.
Isorgan, H. J.	July 23, 1878.
Isorrill, Joseph C.	September 24, 1867.
Isorris, George F.	September 24, 1867.
Isorris, Matilda Parker	July 23, 1878.
Isorris, N. Z.	November 28, 1873.
Isorse, Augustus, Jr.	November 29, 1867.
Isorse, H. A.	March 13, 1879.
Isorse, S. A.	July 23, 1878.

LIFE DIPLOMAS—Continued.

NAMES.	When Issued.
Mower, Miss E.	September 29, 1879.
Mumford, Mrs. M. E.	April 22, 1876.
Munson, J. P.	March 13, 1879.
Murphy, Miss Mary M.	June 1, 1875.
Murry, Adie	September 29, 1879.
Murray, Miss Maggie	March 28, 1878.
Myrack, Thomas S.	December 27, 1866.
Nash, R. J.	September 29, 1879.
Nelson, Henry A.	March 14, 1871.
Nesbitt, Jennie W.	March 28, 1878.
Newcomer, Jacob	September 29, 1879.
Newell, E. C.	March 13, 1879.
Nichols, F. A. E.	March 13, 1879.
Nicholson, Thomas	June 22, 1874.
Norman, L. F.	November 11, 1876.
Norton, Henry B.	March 13, 1879.
Nutting, H. N.	December 27, 1866.
O'Connor, Joseph	March 14, 1871.
O'Connor, Maria E.	January 29, 1876.
O'Dwyer, James	June 22, 1875.
Olinger, A. F.	December 13, 1872.
Oliver, A. W.	January 29, 1876.
Oliver, J. C.	September 1, 1877.
O'Laughlin, Nellie	September 29, 1879.
Oman, Mrs. Alice S.	September 29, 1879.
Oman, G. W.	September 29, 1879.
Otis, Chas. W.	November 28, 1873.
Overend, Miss Lizzie	November 28, 1873.
Owen, Mrs. H. D.	May 28, 1879.
Owens, Miss Nettie M.	May 28, 1879.
Paine, C. R.	March 13, 1879.
Palmer, Miss R. M.	September 24, 1878.
Parker, James L.	March 28, 1878.
Parker, Jean	March 14, 1871.
Parker, Mrs. F. A.	May 5, 1877.
Pascoc, Miss Mary I.	June 3, 1872.
Patterson, Eliza S.	March 13, 1879.
Paulk, C. C.	May 28, 1879.
Paul, R. P.	September 29, 1879.
Peachy, F. A.	March 13, 1879.
Peachy, Thomas G.	September 1, 1877.
Pearson, Dana C.	December 4, 1875.
Pearson, Emily F.	March 13, 1875.
Peck, Geo. H.	June 11, 1875.
Peck, Kate E.	March 13, 1879.
Pettit, E. T.	September 29, 1879.
Pelton, John C.	December 27, 1866.
Pendegast, H. B.	July 23, 1878.
Penwell, S. A.	June 20, 1868.
Persing, Georgia	September 24, 1878.
Phalin, A. M.	March 28, 1873.
Phelps, Mrs. M. W.	June 22, 1874.
Pitcher, Charlotte M.	May 28, 1879.
Pollard, W. D.	September 29, 1879.
Potter, Mrs. H. A.	May 5, 1877.
Potter, M. B.	March 14, 1871.
Powell, Miss Elizabeth	June 1, 1875.
Powell, Frank	November 11, 1871.
Powers, T. P.	March 13, 1879.
Prag, Mrs. Mary	September 1, 1877.
Pratt, Elema	November 11, 1876.
Pray, Mattie J.	September 29, 1879.
Prescott, Miss D. A.	March 14, 1871.
Preston, E. M.	May 21, 1869.
Price, Caroline	November 29, 1867.
Prior, Philip	March 14, 1871.

LIFE DIPLOMAS—Continued.

NAMES.	When Issued.
Pritchard, Mrs. S. M.	March 28, 1878.
Pritchard, V. P.	September 1, 1877.
Pugh, Mrs. F. M.	May 29, 1879.
Putnam, J. E.	December 4, 1875.
Randall, A. H.	June 19, 1868.
Randall, Mrs. A. H.	May 5, 1877.
Rattan, Volney	June 22, 1874.
Rage, Mrs. M. R.	May 5, 1877.
Ready, R. W.	September 29, 1879.
Reavis, W. F. S.	July 23, 1878.
Redway, Jacques	January 29, 1876.
Reed, Dayton A.	July 23, 1878.
Reed, Mrs. Mary F.	September 29, 1879.
Reynolds, Mrs. F. E.	December 13, 1872.
Richards, V. P.	March 28, 1878.
Rightmire, Miss S. A.	May 28, 1879.
Riley, J. H.	November 11, 1876.
Riley, Ella	September 29, 1879.
Rise, Mrs. M. E.	March 28, 1878.
Roberts, B. F.	July 23, 1878.
Robertson, Miss A. C.	September 24, 1878.
Robinson, Mrs. M. S. P.	September 29, 1879.
Rogers, James	January 29, 1876.
Rogers, D. B. H.	September 29, 1879.
Rose, P. H.	June 20, 1868.
Ross, Jane	September 1, 1877.
Rousseau, E.	May 21, 1869.
Rousseau, Mrs. L.	May 28, 1879.
Rowe, Miss A. A.	February 17, 1873.
Rowell, W. K.	December 27, 1877.
Ruddock, J. C.	May 5, 1877.
Russell, Mrs. L. A.	September 29, 1879.
Rutherford, Mary A.	September 29, 1879.
Ryan, Amanda	May 5, 1877.
Salisbury, Mary	January 29, 1876.
Sanborn, Mrs. S. S.	March 28, 1878.
Sanders, W. A.	May 21, 1869.
Sankey, M. J.	January 5, 1875.
Sarvis, George C.	May 28, 1879.
Savage, Myron H.	September 29, 1879.
Sax, H. A.	November 11, 1876.
Saxton, T. A.	May 5, 1877.
Schellhouse, E. J.	May 21, 1869.
Scott, J. F.	September 29, 1879.
Scott, M. M.	May 28, 1879.
Scott, Maggie K.	September 29, 1879.
Scully, T. J.	July 23, 1878.
Seawell, J. H.	April 22, 1876.
Sexton, Ella M.	March 28, 1878.
Shaw, Annie J.	October 26, 1877.
Shaw, Miss E. A.	June 3, 1872.
Shaw, Sebastian	March 28, 1878.
Shaw, Theodore S.	March 13, 1879.
Shearer, Mrs. C. O.	November 28, 1873.
Shearer, S. M.	January 29, 1876.
Sherman, Fannie M.	June 1, 1875.
Ship, J. C.	November 28, 1873.
Short, Miss Julia B.	June 1, 1875.
Shuck, L. M.	March 28, 1878.
Sibley, J. M.	December 27, 1867.
Sickall, Mark T.	March 13, 1879.
Sillinan, Martha A.	March 28, 1878.
Simon, Miss Frances	December 13, 1872.
Simons, John A.	May 28, 1879.
Simonton, Geo. W.	December 27, 1866.
Sinex, T. H.	October 26, 1877.
Sisson, Caroline M.	October 26, 1877.

LIFE DIPLOMAS—Continued.

NAMES.	When Issued.
Slater, Miss Charlotte M.	May 28, 1879.
Slavan, Miss A. E.	June 3, 1872.
Slavan, Thos. H.	March 28, 1878.
Smith, Miss Annie	May 27, 1868.
Smith, Ansel	May 5, 1877.
Smith, Annie E.	May 28, 1879.
Smith, Chas. S.	January 29, 1876.
Smith, Miss Carrie L.	December 13, 1872.
Smith, Frank H.	March 13, 1879.
Smith, George	May 28, 1879.
Smith, Grace	September 1, 1877.
Smith, Mrs. George	July 23, 1878.
Smith, James D.	March 28, 1878.
Smith, Jennie	June 22, 1874.
Smith, Miss Jennie	June 3, 1872.
Smith, Julia	May 28, 1879.
Smith, James	July 23, 1878.
Smith, Miss Mary H.	September 29, 1879.
Smith, Nehemiah	July 25, 1878.
Smith, Stanley A.	March 13, 1879.
Smith, W. A. C.	June 19, 1868.
Snow, T. N.	November 11, 1876.
Soule, Miss M. L.	September 1, 1877.
Soule, Fannie L.	March 28, 1878.
Southeimer, J. J.	November 11, 1876.
Southworth, Mrs. E. A.	December 19, 1868.
Soward, Chas.	May 28, 1879.
Spaulding, Timothy A.	May 28, 1879.
Spencer, Rebecca	September 24, 1878.
Spooner, Alfred	July 23, 1878.
Spring, E. W.	July 23, 1878.
Spring, Mrs. Fannie	July 23, 1878.
Starling, Jennie M.	March 13, 1879.
Standeford, Mrs. N. D.	June 1, 1875.
Stearns, Miss H. P.	March 28, 1878.
Steele, Thos. H.	January 5, 1875.
Stevens, Augusta	March 13, 1879.
Stevenson, Mrs. H. R.	October 26, 1877.
Stincken, Miss Alice M.	November 28, 1873.
Stincken, Ella E. C.	September 29, 1879.
Stiner, Mrs. Jessie H.	September 29, 1879.
Stone, Mrs. B. H.	November 28, 1873.
Stone, D. C.	December 26, 1866.
Stone, H. P.	March 14, 1871.
Stone, Martha	May 5, 1877.
Stone, W. R.	March 13, 1879.
Story, A. R.	September 29, 1879.
Stowell, E. M.	March 28, 1878.
Stowell, Fannie A.	June 22, 1874.
Stowell, Miss M. E.	June 3, 1872.
Stowell, Miss P. M.	June 3, 1872.
Stratton, James	December 27, 1866.
Sturges, David B.	September 29, 1879.
Sturges, Seldon	May 28, 1879.
Swan, Amanda	November 11, 1876.
Swain, O. E.	March 28, 1878.
Sweeney, Edward	September 29, 1879.
Swett, Mrs. Mary L.	December 27, 1866.
Swett, John	September 24, 1867.
Swezey, S. I. C.	November 29, 1867.
Sullivan, D. J.	May 28, 1879.
Sullivan, Miss Kate	June 3, 1872.
Sullivan, Theresa M.	March 13, 1879.
Summers, Susan H.	March 13, 1879.
Sumner, Henrietta	October 26, 1877.
Sumner, J. H.	November 28, 1873.
Sutherland, Miss F. C.	March 13, 1879.

LIFE DIPLOMAS—Continued.

NAMES.	When Issued.
Tait, George	December 27, 1866.
Taylor, Robert	December 27, 1866.
Taylor, Robert S.	May 5, 1877.
Taylor, Agnes C.	March 13, 1879.
Taylor, William S.	May 28, 1879.
Temple, Miss Emma	November 28, 1873.
Templeton, Carrie A.	March 13, 1879.
Templeton, Miss L. S.	December 13, 1872.
Templeton, Louise	September 29, 1879.
Templeton, M. L.	November 29, 1867.
Thompson, Miss Helen	June 3, 1872.
Thompson, J. A.	November 11, 1876.
Thompson, Helen M.	September 29, 1879.
Thompson, Louisa	May 5, 1877.
Thorp, J. H.	March 13, 1879.
Thurber, A.	November 11, 1871.
Thurber, Mrs. J. V.	October 26, 1877.
Thurmond, G. E.	September 29, 1879.
Thurston, E. T.	May 21, 1869.
Thurston, Sarah E.	December 4, 1871.
Tiernan, Mrs. A. C.	September 24, 1878.
Tierney, Maggie A.	September 29, 1879.
Tiffany, H. J.	March 28, 1878.
Titus, Mary J.	March 13, 1879.
Todd, H. J.	January 29, 1876.
Toothaker, Miss M. O.	March 28, 1878.
Towle, C. B.	April 22, 1876.
Trafton, Dr. A.	November 11, 1871.
Trout, D. H.	March 13, 1879.
True, C. F.	March 28, 1878.
Tucker, Mrs. E. R.	July 23, 1878.
Tully, James	March 13, 1879.
Turner, Henry F.	March 28, 1878.
Underwood, J. G.	July 23, 1878.
Upham, Isaac	May 21, 1869.
Van Dorn, V. J.	May 5, 1877.
Van Schaick, Mary A.	March 13, 1879.
Vestal, F. A.	May 5, 1877.
Vincent, Mrs. M. E.	July 23, 1878.
Wade, Margaret	April 26, 1876.
Walbridge, Jeannie	July 23, 1878.
Waldron, Miss Helen R.	May 28, 1879.
Walker, E. H.	May 28, 1879.
Waldron, S. A.	September 29, 1879.
Walker, Cornelia	March 13, 1879.
Walker, C. M.	September 29, 1879.
Wallace, Alma	March 13, 1879.
Wallace, J. T.	September 29, 1879.
Wallace, W. B.	March 28, 1878.
Walsh, Mrs. F. L.	March 13, 1879.
Walsh, Miss Nellie E.	June 1, 1875.
Walsh, Ida C.	September 29, 1879.
Walter, Mrs. C. S.	September 24, 1878.
Warren, C. G.	November 23, 1869.
Warren, E. M.	October 26, 1877.
Warren, E. N.	March 28, 1878.
Warren, R. B.	July 12, 1870.
Wash, W. A.	March 13, 1879.
Washburn, Mrs. Georgia	March 28, 1878.
Watterman, S. D.	November 11, 1871.
Watkins, Emory	January 5, 1875.
Watson, B. J.	June 1, 1875.
Watson, Mrs. C. R.	December 13, 1872.
Watson, Miss Lizzie J.	June 22, 1874.
Watson, Mrs. M. L.	July 23, 1878.
Watson, Miss Mary J.	June 3, 1872.
Watson, N. Flotilla	September 29, 1879.

LIFE DIPLOMAS—Continued.

NAMES.	When Issued.
Way, Mary A.	May 28, 1879.
Webster, Miriam	March 28, 1878.
Weeks, Mrs. J. M.	March 13, 1879.
Weeks, G. W.	September 29, 1879.
Weeks, Mattie C.	May 28, 1879.
Weeks, M. L.	May 5, 1877.
Weir, Helen	May 5, 1877.
Weir, Sarah J.	December 13, 1868.
Wells, Addie H.	September 1, 1877.
Wells, J. C.	May 28, 1879.
Wells, Laura H.	March 14, 1871.
Wemple, E. L.	September 29, 1879.
Wernuth, Hamilton	March 14, 1871.
Westby, Miss L. M.	January 26, 1876.
Weston, Ada	March 28, 1878.
Wheaton, Ann S.	March 13, 1879.
Wheeler, Alanson	July 23, 1878.
Wheeler, Mrs. J. D.	September 29, 1879.
Wheelock, Dorcas	May 28, 1879.
Wheelock, Mrs. D. B.	November 28, 1873.
White, Miss Louisa E.	January 5, 1875.
White, Silas A.	November 11, 1871.
White, T. B.	December 13, 1872.
White, T. W.	March 28, 1878.
White, William	June 20, 1868.
Whitehurst, Thomas W.	March 28, 1878.
Wickes, John T.	March 28, 1878.
Wideman, James	October 26, 1877.
Wilbur, E. W.	March 28, 1878.
Wilber, M. C.	March 13, 1879.
Williams, W. J. G.	November 25, 1869.
Wilson, George W.	July 23, 1878.
Wilson, H. R.	March 14, 1871.
Wilson, H. C.	May 5, 1877.
Wilson, James K.	June 1, 1875.
Winn, A. T.	May 5, 1877.
Winn, Charlotte C.	March 13, 1879.
Wise, Mrs. H. A.	September 24, 1878.
Withington, Augusta	July 23, 1878.
Wixson, J. S.	March 13, 1879.
Wood, C. T.	May 5, 1877.
Wood, Mrs. E. A.	June 3, 1872.
Wood, Jesse	May 28, 1879.
Wood, Mrs. N. A.	November 11, 1876.
Woodbury, W. W.	September 24, 1878.
Wool, Hattie L.	October 26, 1877.
Woodman, Margaret E. H.	March 13, 1879.
Woodman, Mrs. S. Marie	March 28, 1878.
Woods, James L.	March 13, 1879.
Woods, Miss Bettie	March 13, 1879.
Woodruff, Miss Frances A.	July 12, 1870.
Woodward, Mrs. A. W.	December 4, 1875.
Woodward, Miss N. Z.	September 1, 1877.
Woodworth, Mrs. Janette E.	June 1, 1875.
Wozencraft, W. R.	May 28, 1879.
Wright, Ida E.	September 29, 1879.
Wright, Mrs. A. E.	January 29, 1876.
Wright, Abby P.	March 28, 1878.
Yager, Myron	May 28, 1879.
Yarnal, Bennett	March 28, 1878.
Yates, W. A.	June 22, 1874.
York, John, Jr.	July 23, 1878.
Young, Albert	September 24, 1878.
Young, W. H.	September 29, 1879.
Young, Nestor A.	September 29, 1879.
Zimmerman, William	May 5, 1877.

EDUCATIONAL DIPLOMAS.

NAMES.	Expires.
Abbott, Chas. S.	September 19, 1884.
Ables, Thomas J.	June 29, 1880.
Ackerman, Miss Belle	May 23, 1884.
Ackleson, Susan	March 12, 1882.
Adams, Clara A.	July 10, 1882.
Adamson, E. F.	April 24, 1884.
Adamson, J. M.	August 13, 1885.
Adamson, W. H.	October 15, 1884.
Aiken, Ada E.	March 13, 1885.
Alderson, Miss M. J.	May 17, 1881.
Alexander, May J.	August 29, 1880.
Alvord, J. B.	June 12, 1884.
Ambrose, Warren P.	January 27, 1883.
Anderson, Mrs. E. W.	April 23, 1885.
Anderson, George P.	October 23, 1881.
Anderson, W. W.	January 19, 1883.
Anderson, May	July 11, 1885.
Andrews, C. N.	June 8, 1884.
Arnick, D. B.	October 7, 1884.
Arrowsmith, V.	December 31, 1883.
Ashe, Lely	August 5, 1884.
Ashley, Ella E.	March 18, 1882.
Ashton, Mrs. N. Jennie	March 22, 1881.
Atkins, E. S.	March 20, 1883.
Aubrey, Emily	June 11, 1883.
Austine, S. M.	July 10, 1882.
Avery, Sarah	April 7, 1883.
Ayer, Isaac	October 15, 1881.
Ayers, Mary J.	March 22, 1881.
Babcock, H. C.	July 3, 1884.
Babcock, Isabel	October 10, 1882.
Babcock, Wm. S.	January 7, 1881.
Badgley, O. E.	June 29, 1884.
Bailey, Mrs. L. A.	July 9, 1885.
Baizley, Minnie	April 21, 1883.
Bainbridge, Augusta C.	July 15, 1884.
Baker, Mrs. F. E.	June 9, 1885.
Baker, Orie	September 23, 1884.
Baker, Samuel D.	August 28, 1881.
Baker, Samnel D.	December 21, 1883.
Baker, W. H.	July 11, 1884.
Baldwin, F. D.	April 22, 1882.
Banks, George	August 27, 1885.
Banks, Henry H.	December 31, 1883.
Banks, Miss Lizzie M.	February 5, 1885.
Barbour, Aaron C.	December 5, 1880.
Barbour, W. R.	January 11, 1885.
Barkley, J. G.	January 22, 1885.
Barkley, Minnie A.	August 30, 1884.
Barnes, Eliza B.	September 29, 1882.
Barnes, Margaret S.	July 12, 1885.
Barry, Charlotte M.	November 15, 1881.
Bassett, Jennie A.	February 20, 1883.
Bassett, Mary P.	August 25, 1885.
Bateman, J. K.	January 1, 1883.
Bartholomew, Ella M.	March 5, 1885.
Beach, J. V.	September 27, 1883.
Beach, Sarah S.	September 25, 1884.
Beal, Charles R.	January 3, 1884.
Beamer, Emma	June 5, 1883.
Beck, Mrs. N. B.	June 5, 1880.
Beckett, Laura E.	July 1, 1885.
Beebe, Sarah M.	November 1, 1883.
Beggs, J.	June 17, 1884.
Belcher, Miss Mary S.	April 16, 1885.
Bell, J. E. S.	March 1, 1885.

EDUCATIONAL DIPLOMAS—Continued.

NAMES.	Expires.
Bellinger, Mary.	November 16, 1882.
Bennett, Miss E.	July 13, 1884.
Bennett, Flora	January 1, 1883.
Bennison, Miss Lizzie	September 19, 1885.
Benson, Annie E.	November 24, 1883.
Benson, Lizzie	September 19, 1885.
Bentley, Miss L. E.	January 14, 1884.
Berry, I. E.	January 11, 1885.
Berry, James H.	July 5, 1884.
Bertolet, Albert	September 4, 1883.
Betancue, Lizzie	December 13, 1879.
Betts, Mrs. E. J.	May 14, 1885.
Beun, Rachel R.	July 11, 1885.
Bevington, Mrs. Lizzie M.	July 1, 1884.
Bicknell, Bertha W.	January 17, 1884.
Biggs, Thomas	June 27, 1880.
Bightmire, S. A.	September 22, 1881.
Bills, Miss Rebecca A.	May 29, 1885.
Bills, Mrs. R. H.	February 1, 1885.
Bird, Miss Mary	December 24, 1884.
Birdsall, Rebecca B.	March 11, 1884.
Bishop, Miss C. M.	May 14, 1885.
Blackman, J. D.	September 5, 1884.
Blackner, Frank	September 26, 1884.
Blackstaff, M. E. D.	August 26, 1882.
Blaisdell, Sabine W.	January 1, 1883.
Blakely, James O.	September 21, 1883.
Blanchard, J. E.	June 29, 1884.
Bloemer, A. C.	November 7, 1880.
Bolt, Miss Lizzie E.	May 14, 1885.
Boardman, C. F.	January 1, 1882.
Boardman, O. F.	August 22, 1883.
Bodkin, John J.	June 21, 1883.
Boniface, Miss Sarah	September 19, 1885.
Bonnard, Eureka A.	May 18, 1881.
Bonner, Mrs. W. G.	January 7, 1883.
Boschen, Seraphine	July 18, 1880.
Bowman, Levi	June 7, 1884.
Bowse, Ellen F.	November 24, 1883.
Boyden, Edgar A.	June 22, 1884.
Boyle, Mary	June 7, 1883.
Boyle, Sarah J.	March 18, 1882.
Boyers, Cary Lee	February 27, 1884.
Boynton, J. C.	September 26, 1884.
Boynton, S. S.	March 18, 1882.
Boynton, Kate	May 31, 1881.
Bradshaw, J.	September 29, 1885.
Bragg, Lizzie	September 23, 1885.
Bragg, Miss M. J.	February 19, 1880.
Bradbury, Miss V. E.	July 17, 1885.
Braddock, D. W.	October 16, 1884.
Bradley, Mrs. E. P.	November 15, 1881.
Bradner, Nettie F.	January 5, 1884.
Braner, W. F.	January 5, 1884.
Bradshaw, W. R.	July 10, 1882.
Bramlett, R. H.	September 4, 1885.
Bray, W. F.	June 5, 1883.
Brigham, Fannie E.	July 8, 1884.
Brier, Mary	May 29, 1884.
Bradbent, E.	July 10, 1882.
Britton, Silas W.	August 13, 1885.
Brogan, Mrs. J. B.	July 31, 1884.
Brophy, M.	May 22, 1880.
Brooks, Elisha	July 27, 1882.
Brooke, Henry C.	March 26, 1885.

EDUCATIONAL DIPLOMAS—Continued.

NAMES.	Expires.
Brooks, E. R.	July 10, 1882.
Brothers, George A.	June 29, 1884.
Bruch, Lewis	March 27, 1884.
Brunsley, Miss M. I.	April 10, 1881.
Brown, B. L.	November 24, 1883.
Brown, Chas. W.	April 22, 1882.
Brown, Geo. J.	December 5, 1880.
Brown, J. B.	January 10, 1880.
Brown, L. L.	June 29, 1884.
Brown, W. H.	September 3, 1884.
Buckman, Miss C. T.	August 10, 1884.
Bugbey, Mrs. B. N.	March 24, 1880.
Bulfinch, Stephen A.	June 21, 1883.
Bull, Mary D.	January 14, 1884.
Bunnell, Mrs. Alice	April 6, 1884.
Burch, Samuel N.	May 14, 1885.
Burge, Miss Jennie	May 29, 1885.
Burke, Jennie	September 30, 1882.
Burke, Miss M. J.	November 6, 1882.
Burnett, Albert	March 14, 1885.
Burnett, John H.	March 15, 1885.
Bush, Mrs. E. A.	September 22, 1881.
Bush, Solomon	September 29, 1882.
Burt, Augustus R.	May 23, 1884.
Burt, Minnie Clara	February 8, 1885.
Butler, A. D.	December 31, 1883.
Butler, K. D.	March 10, 1885.
Butler, Orpha	June 20, 1884.
Butterfield, S. A.	January 1, 1882.
Buzzo, Mrs. M. J.	August 30, 1883.
Byrod, Sarah	January 1, 1883.
Caldwell, Mrs. M. E.	November 24, 1883.
Call, Martha C.	September 16, 1882.
Callahan, Mary E.	November 24, 1883.
Campbell, Amelia E.	March 26, 1885.
Campbell, Amy T.	March 13, 1881.
Campbell, E. S.	March 20, 1883.
Campbell, Ruth G.	July 9, 1883.
Carithers, Eli	July 1, 1884.
Carlisle, Mrs. E. M.	October 4, 1884.
Carlisle, Mrs. M. A.	September 24, 1883.
Carmichael, P. J.	November 24, 1883.
Carpenter, Mary E.	May 29, 1885.
Carr, Francis	September 29, 1882.
Carr, J. E.	November 26, 1884.
Carter, Miss Elma	July 15, 1884.
Carter, Miss Louisa	April 5, 1885.
Carusi, Samuel P.	November 24, 1883.
Carver, H. E.	August 31, 1884.
Case, E. L.	May 20, 1880.
Casterlin, J. B.	October 30, 1883.
Casterlin, Mrs. M. A.	October 30, 1883.
Cate, Horatio W.	October 20, 1883.
Chadwick, A. M.	June 8, 1884.
Chandler, Ella	July 5, 1884.
Chamberlain, Anna E.	February 22, 1885.
Chapin, F. W.	December 30, 1884.
Chase, Hattie A.	August 5, 1884.
Child, Helen	October 23, 1881.
Chestnut, J. G.	September 4, 1885.
Chestnutwood, Lizzie	February 28, 1883.
Childs, Augusta C.	August 5, 1884.
Childs, Kate B.	July 31, 1884.
Chipman, L. J.	January 1, 1882.
Chrisman, W. S.	September 4, 1885.

EDUCATIONAL DIPLOMAS—Continued.

NAMES.	Expires.
Church, W. S.	June 2, 1885.
Ciprico, Anita C.	February 8, 1881.
Clark, Ella A.	February 2, 1884.
Clark, Mrs. S. A.	February 19, 1885.
Clawson, William F.	May 17, 1883.
Clayton, Mrs. L. A.	June 17, 1884.
Clement, C. H.	March 13, 1885.
Clements, Charles C.	April 23, 1885.
Clifford, Carrie	September 19, 1885.
Clow, Miss Emelia	February 1, 1884.
Clow, Miss Mary B.	February 1, 1884.
Coburn, L. F.	December 9, 1884.
Code, Mrs. E. S.	August 15, 1885.
Colby, Julia E.	July 10, 1882.
Colby, Mary A.	October 23, 1881.
Colby, Phebe S.	June 2, 1885.
Cole, Miss Emma F.	November 1, 1884.
Cole, Miss Marie	February 19, 1885.
Collier, Mrs. J. W.	July 19, 1883.
Coleman, Charles, Jr.	August 26, 1884.
Coleman, Mrs. D. M.	January 1, 1883.
Collins, Mrs. C. R.	July 9, 1885.
Congdon, James S.	January 18, 1882.
Conrad, C. C.	March 18, 1882.
Conrad, F. W.	July 17, 1883.
Convis, Mrs. M. E.	August 13, 1883.
Conroy, Ellen A.	January 1, 1883.
Cooper, Miss A. A.	August 7, 1881.
Cooper, Calvin A.	July 1, 1884.
Cooper, Miss S. V.	June 16, 1883.
Cornelius, Miss L. E.	February 18, 1884.
Cory, Miss A. A.	April 10, 1881.
Cory, Miss Nellie	November 14, 1884.
Coulter, A. H.	January 11, 1884.
Courter, Henry F.	April 2, 1885.
Covilland, Charles J.	March 11, 1885.
Cox, Kate M.	January 1, 1882.
Cox, Mary A.	September 24, 1883.
Cox, B. B.	February 13, 1884.
Craddock, Sarah E.	July 8, 1884.
Crane, Amanda	September 22, 1881.
Crane, Ellis T.	May 7, 1883.
Crane, George	November 7, 1880.
Cranz, Sophia	November 24, 1883.
Crawford, Alonzo	May 7, 1885.
Cressy, W. E.	September 26, 1883.
Crichton, Mrs. A. M.	January 28, 1882.
Crittenden, J. L.	June 7, 1884.
Cromwell, James G.	December 31, 1883.
Crook, W. C.	December 31, 1884.
Cromwell, C. H.	July 9, 1885.
Crotters, Margaret I.	December 5, 1880.
Crumrine, Harrison	December 13, 1884.
Cummings, E. C.	November 24, 1883.
Curragh, J. M.	July 18, 1880.
Curran, Cecelia	October 26, 1882.
Curran, Mrs. M. K.	November 24, 1883.
Currier, Adelinie S.	July 1, 1885.
Currier, Mrs. M. H.	July 31, 1884.
Curtis, H. C.	March 13, 1883.
Curtis, L. F.	January 21, 1884.
Darby, R. R.	July 15, 1884.
Darke, F. E.	July 15, 1884.
Darling, Cora E.	August 18, 1885.
Dascumb, Charles	November 15, 1881.
Dashields, Fred. S.	July 15, 1884.

EDUCATIONAL DIPLOMAS—Continued.

Names.	Expires.
Davidson, J. M.	September 9, 1884.
Davidson, Nannie S.	September 22, 1881.
Davidson, R. P.	September 27, 1883.
Davidson, W. W.	July 11, 1885.
Davis, A. G. W.	September 22, 1883.
Davis, E. W.	June 5, 1884.
Davis, Jennie E.	September 24, 1884.
Davis, N. W.	July 14, 1885.
Day, Francis M.	February 6, 1884.
Deakin, Wm. J.	July 21, 1883.
Delay, D. J.	March 26, 1885.
De Lancie, Richard	July 3, 1884.
Dennis, L. M.	March 20, 1883.
De Pencier, S. T.	June 17, 1884.
Denure, D. D.	May 31, 1881.
Denie, Ruth M.	September 11, 1885.
Derrick, Ruth M.	September 19, 1885.
Deuel, Mrs. Hattie S.	May 21, 1885.
Dickinson, Marie	December 31, 1883.
Dickson, James M.	November 24, 1883.
Dillon, Miss Maggie	September 19, 1885.
Dixon, Alfred	October 1, 1883.
Dixon, Bessie	July 10, 1882.
Dixon, Mrs. Regina M.	July 15, 1884.
Donnelly, Miss M. E.	July 17, 1884.
Doty, James	July 2, 1884.
Doyle, Irene	July 20, 1882.
Drake, Chas. M.	September 22, 1881.
Drake, Elmer	January 1, 1882.
Driscoll, Josie	December 18, 1882.
DuBois, C. G.	June 8, 1884.
DuBois, John B.	June 27, 1880.
Dudley, Alice J.	April 2, 1885.
Duenkel, Wm.	July 18, 1880.
Duggan, Amelia	June 22, 1885.
Dunbar, Annie S.	January 10, 1880.
Duncan, Annie	January 26, 1883.
Duncan, Elizabeth	January 7, 1883.
Dunham, C. F.	July 6, 1884.
Earle, Miss C. B.	April 2, 1885.
Eastin, A.	January 11, 1885.
Eddy, John M.	January 14, 1884.
Edwards, D. K.	October 5, 1884.
Edwards, W. H.	February 8, 1881.
Elder, J. C.	June 6, 1883.
Elkins, Achaia	June 16, 1883.
Elliott, Ella J.	July 10, 1882.
Elliott, Kate	May 4, 1883.
Elliott, Mary E.	April 10, 1880.
Ellis, Carrie M.	October 10, 1882.
Ellis, J. W.	July 9, 1885.
Emery, Cordelia	June 29, 1884.
England, Miss Basha	June 7, 1884.
Ennis, Chas.	January 17, 1884.
Ennis, Chas.	January 1, 1883.
Entrican, Mrs. Annette	February 1, 1885.
Evans, Miss M. A.	April 30, 1885.
Fablinger, James	July 9, 1885.
Fahey, Maggie	June 4, 1883.
Fairechild, Hattie E.	February 25, 1883.
Farmer, Fannie	March 15, 1885.
Farrell, Aggie	July 17, 1885.
Faulkner, James	September 29, 1885.
Fay, Alvin	May 14, 1885.
Fay, Mrs. Ella E.	July 15, 1884.
Fellers, Lorenzo	January 4, 1881.

EDUCATIONAL DIPLOMAS—Continued.

NAMES.	Expires.
Fay, Miss Mary A.	June 9, 1885.
Felts, J. M.	September 1, 1883.
Fennell, Miss Lizzie E.	May 10, 1885.
Fink, Miss A. P.	January 27, 1883.
Finley, S. J.	April 9, 1885.
Fiske, Harry W.	July 25, 1883.
Fitzsimmons, Miss Kate	June 9, 1885.
Flint, Atkinson T.	October 3, 1880.
Floyd, Enos F.	March 18, 1882.
Floyd, Mary E.	June 24, 1884.
Fogg, Miss Belle	May 29, 1885.
Folger, Sarah J.	January 1, 1883.
Ford, Ella M.	July 30, 1885.
Ford, H. W.	October 19, 1884.
Ford, James A.	March 4, 1884.
Ford, Plin	July 30, 1885.
Foss, B. R.	July 10, 1882.
Foss, William F. F.	July 10, 1882.
Fouche, Eliza P.	June 27, 1883.
Fowler, B. F.	May 17, 1881.
Fowler, Foland P.	April 3, 1883.
Freeman, G. N.	August 29, 1880.
French, Sarah T.	April 30, 1885.
Fuller, Mary L.	January 8, 1884.
Furlong, Robert	March 13, 1881.
Gabriel, Mrs. C. E.	January 17, 1880.
Gage, Lewis Cass	September 21, 1883.
Galbrath, W. H.	January 29, 1885.
Gallagher, Gertrude	August 10, 1884.
Gallagher, Maggie	August 26, 1884.
Gallagher, William	June 30, 1885.
Galusha, N. H.	July 18, 1884.
Gamble, John	June 7, 1884.
Gamble, John A.	March 26, 1885.
Gardner, Mrs. Maggie	September 29, 1885.
Garlick, J. P.	April 10, 1880.
Garrison, Cazena A.	July 10, 1880.
Garton, Manetta	July 9, 1885.
Garvin, Ora	February 12, 1885.
Garwood, Sarah E.	January 27, 1884.
Gates, Sophia B.	July 10, 1882.
Garvin, Paul A.	March 18, 1882.
Geer, Emily F.	June 7, 1881.
Germain, Sallie	January 1, 1884.
Gesford, H. C.	November 18, 1884.
Gilbertson, Abbie	August 4, 1882.
Gilman, Martha A.	November 15, 1881.
Gilson, J. C.	January 1, 1883.
Glidden, R. J.	January 1, 1882.
Godfrey, Grove K.	November 9, 1882.
Goin, J. W.	October 19, 1884.
Goin, Thomas J.	July 13, 1884.
Goldsmith, Esther	March 20, 1883.
Goodecell, H. J., Jr.	January 1, 1882.
Goodecell, Mrs. Minnie A.	March 25, 1884.
Goodell, George	September 11, 1885.
Goodell, Wm.	July 1, 1885.
Goodspeed, T. V.	May 17, 1885.
Gorman, Mrs. J. B.	July 5, 1884.
Goucher, G. G.	October 23, 1881.
Gould, Jennie C.	June 7, 1884.
Gourley, Jennie A.	January 17, 1883.
Goustiaux, Albertine	February 18, 1884.
Gower, Mary L.	January 23, 1885.
Gracey, Robert	May 4, 1884.
Graham, Miss E. E. V.	May 17, 1885.

EDUCATIONAL DIPLOMAS—Continued.

NAMES.	Expires.
Grainger, W. C.	November 27, 1883.
Graney, Miss M. M.	May 29, 1885.
Grant, Helen A.	December 13, 1879.
Gray, Annie E.	May 31, 1881.
Graves, O. E.	July 8, 1884.
Gray, S. P.	January 1, 1883.
Greathead, Mrs. Estelle	February 27, 1884.
Gregg, Miss Alice	September 29, 1884.
Green, Mrs. A. H.	October 31, 1884.
Green, Katie A. H.	November 15, 1881.
Greenwood, Lula E.	November 8, 1882.
Greer, Miss C. E.	December 13, 1879.
Griffin, Martha E.	September 1, 1883.
Griffin, Emma	July 1, 1885.
Griffin, Chas. R.	June 21, 1883.
Griffin, Miss R. E.	February 23, 1884.
Grigsby, Phebe P.	August 31, 1883.
Grumsky, Miss Lottie	February 26, 1884.
Gurney, Benjamin	June 7, 1884.
Hagar, Chas. R.	July 11, 1881.
Hagen, Louisa	January 1, 1883.
Hagerman, A. B.	March 22, 1885.
Hail, Felix G.	July 22, 1884.
Haislip, C. C.	August 10, 1884.
Haislip, Benj. F.	June 7, 1881.
Haley, W. S.	June 22, 1883.
Hall, Miss Alice J.	May 21, 1885.
Hall, Mrs. E.	September 11, 1885.
Hall, Mrs. F. M.	February 8, 1881.
Hall, Maggie J.	June 27, 1880.
Hall, Mrs. Mary C.	March 4, 1884.
Hamill, Amelia	March 18, 1882.
Hamilton, Hiram	June 7, 1881.
Hamilton, Hiram M.	November 7, 1880.
Hamilton, Mrs. M. J.	September 27, 1885.
Hamilton, James T.	January 1, 1882.
Hamilton, Mrs. W. H. H.	December 13, 1879.
Hamilton, W. J.	May 14, 1885.
Hammond, Hulda A.	March 20, 1883.
Hammond, W. H.	May 1, 1883.
Handsaker, J. T.	September 4, 1885.
Hankenson, John B. R.	June 17, 1884.
Hauna, Ross	September 3, 1884.
Hapgood, Emma	April 4, 1883.
Hardy, Irene	June 8, 1884.
Hare, Miss Fannie	October 29, 1884.
Harrington, Maggie J.	September 25, 1883.
Harris, Dora B.	October 26, 1882.
Harris, Ella A.	August 2, 1885.
Harrison, Miss Ella	July 2, 1884.
Hart, Mrs. Etta	September 8, 1885.
Hart, J. E.	July 15, 1885.
Hart, Mrs. Mary C.	March 27, 1884.
Hartley, G. P.	June 7, 1884.
Hart, Miss Pauline	April 16, 1885.
Hartley, Mrs. J. E.	August 20, 1884.
Hartley, Mrs. Marie D.	July 9, 1885.
Hartman, Minnie	August 10, 1884.
Hartmeyer, Mrs. S. L.	January 1, 1882.
Hartson, D. H.	December 31, 1883.
Hartson, Iola S.	August 31, 1883.
Harvey, Olevier T.	March 18, 1882.
Hatch, E. Florence	April 4, 1883.
Hatch, J. L.	February 10, 1880.
Hattin, Mrs. Chas. E.	January 27, 1883.
Hauck, Julia L.	September 25, 1884.

EDUCATIONAL DIPLOMAS—Continued.

NAMES.	Expires.
Havens, Carrie	July 10, 1882.
Hawkins, J. O.	June 27, 1880.
Hawkins, Mrs. Mary	September 19, 1885.
Hawks, Carrie M.	December 5, 1880.
Hawks, Emma L.	June 30, 1883.
Hawley, Mrs. Anna	July 1, 1884.
Hawley, Elizabeth	August 10, 1884.
Hayburn, Annie M.	March 18, 1882.
Hayman, John	September 3, 1884.
Hazen, P. J.	November 7, 1880.
Heard, Jennie	October 17, 1883.
Heard, Sue V.	April 17, 1883.
Heath, Alice	June 21, 1883.
Heath, Henry C.	March 20, 1883.
Heaton, Mary C.	April 4, 1883.
Heckman, H. H.	March 18, 1883.
Hemenway, Maria M.	June 17, 1884.
Henderson, Miss M. J.	August 26, 1883.
Henderson, W. H.	July 28, 1884.
Heney, Miss Julia A.	October 23, 1883.
Henley, Clara	January 11, 1885.
Herman, Miss Theresa	May 29, 1885.
Herrod, Wm.	July 25, 1884.
Henning, David F.	September 26, 1883.
Hiatt, Pleasant	March 24, 1880.
Hickman, J. B.	October 4, 1884.
Higgins, B. F.	March 26, 1885.
Hill, E. H.	March 13, 1883.
Hills, Alfred F.	September 4, 1885.
Hilton, Emily H.	November 24, 1883.
Hilton, Sophia	April 6, 1883.
Hineckley, Almira C.	February 23, 1883.
Hines, Gideon D.	July 25, 1884.
Hinkley, Mrs. Elizabeth	March 26, 1885.
Hinton, J. M.	July 10, 1882.
Hitchcock, Leroy B.	June 29, 1884.
Hixon, Geo. C.	February 8, 1883.
Hobbs, W. H.	January 23, 1885.
Hoehheimer, Miss Etta	May 4, 1884.
Hodgkins, Mary A.	May 10, 1884.
Holbrook, Edw.	January 1, 1882.
Holbrook, Miss Nellie	July 15, 1884.
Holmes, Ada M.	June 21, 1883.
Holmes, M. D.	July 10, 1883.
Holman, Laura	June 7, 1884.
Holton, Abba L.	May 2, 1883.
Hopkins, Anna	January 1, 1884.
Hopkins, Miss Lizzie	January 11, 1885.
Hopkins, Kate E.	January 11, 1884.
Horn, Miss Laura	January 22, 1885.
Horton, George Wallace	January 1, 1882.
Houchins, Samuel	September 23, 1885.
Housh, William H.	April 30, 1886.
Howard, Benjamin F.	March 12, 1885.
Howard, William B.	November 15, 1884.
Howe, Miss M. K.	September 11, 1885.
Howe, A. J.	September 3, 1884.
Howe, Newton P.	December 31, 1883.
Howe, Mrs. M. R.	September 11, 1885.
Howell, Mark	July 2, 1884.
Hoyt, Mrs. H. E.	July 18, 1884.
Hull, Clinton F.	August 13, 1885.
Humphrey, Edward C.	August 16, 1884.
Hunt, B. E.	June 27, 1880.
Hunt, Mrs. E. G.	February 1, 1885.
Hunt, Mrs. M. C.	May 11, 1883.

EDUCATIONAL DIPLOMAS—Continued.

NAMES.	Expires.
Hunter, John	July 2, 1883.
Hurley, Kate E.	June 20, 1884.
Hutchinson, Sarah A.	July 15, 1885.
Hutton, Mrs. Julia A.	June 10, 1884.
Ingham, Oscar S.	February 5, 1885.
Ingraham, Duncan J.	December 31, 1883.
Inskip, P. S.	November 24, 1883.
Isman, S. G.	March 30, 1883.
Ivanovich, Nellie R. J.	July 23, 1883.
Jackman, Ann M.	February 2, 1884.
Jacobs, Rebecca	July 21, 1884.
James, Mrs. L. J.	March 20, 1884.
Jamison, J. H. S.	September 22, 1881.
Jauvier, A. E.	July 27, 1882.
Jefferson, Miss Dora M.	October 19, 1884.
Jenks, David W.	April 10, 1880.
Jewett, Fidelia	December 13, 1879.
Johnson, G. N.	December 18, 1880.
Johnson, G. W.	March 24, 1880.
Johnson, J. W.	August 29, 1880.
Johnson, J. G.	June 2, 1885.
Johnson, Julian W.	June 21, 1885.
Johnson, Clara M.	March 13, 1885.
Jones, Mrs. C. B.	March 12, 1883.
Jones, Sarah M.	May 5, 1883.
Jordan, Maggie L.	January 1, 1882.
Kane, Richard	January 1, 1882.
Kaplan, Marie E.	July 31, 1884.
Kean, G. A.	September 3, 1884.
Kennedy, John	September 23, 1884.
Kearney, Arthur	May 17, 1885.
Keegan, Mary A.	April 10, 1881.
Kellogg, Adelbert E.	July 18, 1882.
Kellogg, Franklin E.	September 26, 1885.
Kelly, Alice A.	July 1, 1885.
Kelly, Mrs. L.	June 9, 1883.
Kelly, Miss Susie E.	May 11, 1884.
Kelso, Tuella	January 27, 1882.
Kelton, Mary A.	June 27, 1880.
Kendall, Mrs. C. A.	October 14, 1883.
Kendall, Marion A.	May 17, 1885.
Kendall, Sylvia A.	October 3, 1880.
Kennedy, Gano	July 9, 1885.
Kennedy, J. F.	October 17, 1880.
Kennedy, T. E.	February 14, 1883.
Kennedy, Neil	June 22, 1884.
Kenniston, Charles M.	January 1, 1882.
Kernade, William	June 2, 1885.
Kent, Isabella	February 20, 1883.
Kent, M. F.	March 13, 1885.
Keran, A. P.	March 27, 1884.
Keran, J. N.	March 27, 1884.
Kerr, A. W.	August 16, 1884.
Kidd, Grace E.	July 14, 1883.
Kidder, Mrs. Sophia	December 3, 1883.
Kilpatrick, E. C.	November 20, 1882.
Kimball, C. A.	April 10, 1880.
King, C. A.	May 23, 1884.
Kinkade, Letitia	August 7, 1881.
Kington, William A.	January 4, 1881.
Kingman, Mrs. M. V.	September 22, 1881.
Kinsey, C. C.	October 2, 1882.
Kirk, T. J.	June 17, 1884.
Kirkland, Cordelia	January 1, 1882.
Klink, John F.	August 7, 1881.
Klink, Jennie S.	July 17, 1885.

EDUCATIONAL DIPLOMAS—Continued.

NAMES.	Expires.
Knight, D. S.	September 3, 1884.
Knowlton, Miss L. M.	September 26, 1885.
Labonta, Alice L.	October 24, 1884.
Lafferty, J. N.	June 27, 1880.
Lafranchi, Mrs. C.	November 24, 1883.
Laird, Maria E.	August 10, 1884.
Lambert, Daniel	March 18, 1882.
Lande, Miss Josephine	August 8, 1884.
Langan, George	January 1, 1882.
Larow, Peter	May 21, 1885.
Larkins, E. O.	May 29, 1885.
Larue, W. H.	September 4, 1884.
Leach, Mira	January 1, 1882.
Leary, Bell S.	July 31, 1885.
Leppien, Dora	September 24, 1883.
Le Fevre, J. P.	July 3, 1884.
Lehler, Lizzie M.	May 29, 1885.
Lerggett, Miss Kate	March 29, 1885.
Lehan, M. S.	January 4, 1884.
Lewis, J. S.	February 12, 1885.
Lichtenthaler, Miss M.	June 8, 1884.
Lighte, Pauline S.	August 8, 1884.
Lindberg, Miss E. M.	July 27, 1885.
Lindsay, C.	July 24, 1884.
Lindsay, Mrs. M. A.	June 13, 1883.
Linscott, John W.	September 23, 1883.
Lipman, Miss M. E.	September 3, 1884.
Lippman, Miss M.	October 5, 1884.
Lipowitz, Max	August 29, 1880.
Little, Mary	July 10, 1882.
Littlejohn, B.	December 5, 1880.
Lloyd, D. M.	September 29, 1885.
Lloyd, Julius S.	February 4, 1884.
Lloyd, Mary A.	September 22, 1882.
Loofbourrow, Elias	March 18, 1882.
Lohmiller, Chas. A.	May 14, 1885.
London, J.	September 22, 1881.
Loring, Martha W.	January 11, 1884.
Lovett, W. B.	June 22, 1884.
Lowe, Mrs. A.	May 11, 1883.
Lowe, Sarah	January 13, 1883.
Lowe, Mrs. Emma F.	July 1, 1885.
Lowry, Hiram N.	September 10, 1885.
Lowell, J. M.	July 2, 1884.
Ludlum, Evelyn M.	November 15, 1881.
Lynch, Ida M.	July 5, 1883.
Lynch, Tillie S.	December 13, 1879.
Lynch, W. F. B.	June 4, 1881.
Lym, Timothy J.	September 19, 1885.
Lyon, Timothy J.	September 19, 1885.
Lyser, Albert	February 19, 1880.
Lytle, Cinda	May 29, 1885.
Maack, George F.	July 31, 1884.
Macintire, W. E.	December 12, 1883.
Madden, Agnes G.	July 11, 1885.
Maddux, Mary	September 21, 1883.
Maguire, Louisa	April 26, 1883.
Manly, G. B.	July 11, 1885.
Mann, Mrs. S. J.	February 11, 1884.
Manzer, John	July 14, 1885.
Marcus, Mrs. E. C.	July 23, 1884.
Markham, Chas.	October 10, 1882.
Martin, A. F.	May 11, 1884.
Martin, Miss E. J.	July 10, 1882.
Martin, Edith J.	March 25, 1884.
Martin, Mrs. Fannie M. G.	May 29, 1885.

EDUCATIONAL DIPLOMAS—Continued.

NAMES.	Expires.
Martin, James M.	January 4, 1881.
Martin, Miss Julia	July 9, 1885.
Martin, James S.	July 2, 1884.
Martling, James A.	May 29, 1884.
Marston, C. E.	July 2, 1884.
Marvin, Miss A.	June 27, 1880.
Mason, W. H.	November 7, 1884.
Matlick, I. N.	December 29, 1883.
Mathews, Mary	November 20, 1882.
Mathews, Mrs. M. E.	August 29, 1880.
Maxwell, Walter	March 15, 1885.
Mayhew, Mrs. H. A.	January 23, 1885.
McAllister, F. H.	December 12, 1884.
McArthur, A. W.	January 26, 1883.
McBrown, Alva	February 12, 1885.
McCabe, Edward B.	April 12, 1885.
McCaun, Maria E.	March 5, 1883.
McCarthy, Thos.	July 22, 1880.
McClanahan, Mrs. R.	January 23, 1885.
McCleery, Lizzie	January 1, 1883.
McClenahan, D. A.	December 31, 1883.
McClymonds, J. W.	July 24, 1885.
McConnell, Harriet	November 14, 1884.
McCourt, James	September 14, 1885.
McCowan, Mrs. M. E. P.	September 26, 1884.
McCroskey, R. C.	June 13, 1883.
McCulloch, Mrs. H. E.	July 11, 1884.
McDermott, Annie	August 30, 1885.
McDonald, Mrs. J.	March 24, 1880.
McDonald, J. J.	March 13, 1881.
McDonald, Kate	March 18, 1882.
McDonald, W. P.	January 22, 1880.
McDowell, T. K.	October 8, 1884.
McEwen, John	July 10, 1882.
McFadden, Miss Katie	December 23, 1884.
McFadden, John	December 18, 1880.
McGowan, Patrick H.	March 24, 1880.
McHugh, Peter	July 10, 1882.
McIndoe, Miss C.	September 3, 1884.
McKean, Lottie	August 29, 1880.
McKean, W. G.	November 1, 1883.
McKillop, A.	June 8, 1884.
McKown, Mrs. M. E.	October 23, 1881.
McKusick, H. P.	September 22, 1881.
McMenomy, Jennie H.	October 12, 1884.
McMillan, W. J.	November 26, 1884.
McMullan, J. G.	December 23, 1884.
McNamer, J. P.	March 26, 1885.
McPhail, J. S.	January 1, 1883.
McPhee, Dougald A.	July 1, 1882.
McPherson, Stephen	January 1, 1883.
McPherson, Mrs. S. W.	April 17, 1883.
McPherson, W. G.	June 8, 1884.
Meagher, John F.	April 10, 1880.
Meek, Annie P.	June 2, 1885.
Megahan, Ambrose	September 19, 1885.
Meginity, Mary P.	August 20, 1884.
Melrose, Mary H. C.	July 6, 1884.
Menges, Carrie A.	May 11, 1884.
Meredith, C. T.	March 29, 1885.
Merrill, Ida M.	January 1, 1882.
Merritt, Julia E.	March 24, 1880.
Mervin, Charles E.	July 18, 1884.
Metcalf, Mary F.	February 19, 1884.
Metzgar, J. E.	March 10, 1885.

EDUCATIONAL DIPLOMAS—Continued.

NAMES.	Expires.
Michener, Mrs. M. E.	January 1, 1882.
Miles, Mrs. R. A.	June 7, 1881.
Miles, Mrs. S. A.	December 3, 1883.
Miller, Mrs. E. K.	September 26, 1884.
Miller, Emma J.	January 7, 1883.
Miller, Mrs. Isabella	March 30, 1884.
Miller, John H.	October 3, 1880.
Miller, Sarah E.	October 23, 1881.
Millington, Mrs. M. A. H.	September 25, 1883.
Mills, Miss Alice	February 13, 1884.
Mills, Myron	April 23, 1883.
Minta, Wesley	November 7, 1880.
Mitchell, Katie	May 7, 1885.
Montgomery, A. C.	September 6, 1883.
Montgomery, A. S.	May 17, 1881.
Morford, N. A.	March 18, 1882.
Morgan, H. J.	June 17, 1884.
Morgan, Richard	August 7, 1881.
Morgan, Rose E.	July 10, 1882.
Moore, Ira	November 10, 1882.
Moore, Mrs. M. E.	November 1, 1881.
Morris, Matilda P.	May 2, 1884.
Moroney, Mary E.	March 4, 1884.
Morton, Mrs. S. E.	April 30, 1885.
Mott, Mrs. Mary	July 22, 1884.
Mower, Edith	January 1, 1883.
Murdoch, Miss Ella	June 7, 1884.
Murdoch, Miss M. E.	April 30, 1885.
Mullins, Miss H.	July 10, 1882.
Mumford, Mrs. M. E.	January 1, 1882.
Munson, Mrs. J.	September 29, 1885.
Murnan, John T.	January 1, 1882.
Murphy, Annie L.	November 24, 1883.
Murphy, C. H.	August 31, 1883.
Murray, Cecil A.	October 9, 1884.
Murray, Maggie	June 16, 1883.
Muth, Miss Hattie	July 19, 1885.
Nattinger, Mrs. A. G.	May 7, 1885.
Neal, Robert J.	July 2, 1884.
Neill, M. A. O.	April 22, 1882.
Nelson, Mrs. Lucy S.	June 9, 1885.
Newberry, Hattie K.	November 24, 1883.
Newcomer, Jacob	September 4, 1882.
Newell, E. C.	January 22, 1885.
Nichols, Miss F. A. E.	January 22, 1885.
Nickerson, W. A.	October 11, 1882.
Nolan, M. J.	October 10, 1882.
Norman, L. F.	August 7, 1881.
Norris, Laura B.	April 2, 1882.
Norton, Henry B.	March 12, 1885.
Norvell, Joseph A.	March 18, 1882.
O'Brien, Miss Kate	August 26, 1882.
O'Brien, Kate	November 24, 1883.
Oglesby, Miss M. A.	February 19, 1884.
O'Laughlin, Nellie	November 7, 1880.
O'Leary, Kate R.	September 2, 1882.
Oliver, J. C.	January 1, 1882.
Owman, G. W.	December 11, 1884.
O'Neal, Miss J. H.	October 15, 1884.
O'Neil, J. G.	February 27, 1884.
O'Neil, Mary L.	October 4, 1884.
Ornström, Flora S.	March 24, 1880.
Owen, Georgie	January 4, 1881.
Owen, Mrs. H. D.	April 30, 1885.
Owen, Miss Phebe	September 28, 1884.
Owen, Miss Susie	September 28, 1884.

EDUCATIONAL DIPLOMAS—Continued.

NAMES.	Expires.
Owen, Nellie M.	June 14, 1882.
Paden, R. A.	April 9, 1885.
Paine, Charles R.	March 10, 1885.
Palmer, Miss R. M.	June 27, 1880.
Parker, Flora A.	September 22, 1881.
Parker, James L.	June 27, 1880.
Patchett, Virginia	December 31, 1883.
Patterson, Miss E. S.	January 31, 1883.
Patton, Herbert	August 11, 1885.
Paul, Miss R. P.	August 18, 1885.
Paulk, Charles C.	May 17, 1885.
Peachy, Thomas G.	July 18, 1880.
Peadry, Frank A.	October 3, 1880.
Pearce, Carrie	August 7, 1881.
Peck, Kate E.	January 22, 1885.
Pedler, F. A.	March 13, 1881.
Pedlar, Miss F. A.	December 1, 1883.
Peiser, Betsy	November 30, 1884.
Pelham, Mrs. M. E.	December 12, 1884.
Pendegast, H. B.	January 4, 1881.
Perrigo, Mary J.	February 13, 1884.
Peterson, Miss Annie	May 7, 1885.
Pettit, E. T.	February 5, 1884.
Peyton, Mrs. J. A.	February 2, 1884.
Phelps, N. S.	July 9, 1885.
Philbrook, Florence E.	February 28, 1885.
Philbrook, H. W.	January 23, 1885.
Phillips, Anna M.	September 24, 1882.
Phillips, Hannah	August 8, 1884.
Phillips, Josie	January 25, 1885.
Pitcher, Charlotte M.	January 26, 1882.
Poage, John A.	July 9, 1884.
Poage, Mrs. Lelia S.	July 9, 1884.
Pollard, W. D.	June 30, 1885.
Pond, Mrs. O. H.	August 26, 1885.
Porter, Miss Mary S.	July 12, 1884.
Potter, Harriet	January 7, 1883.
Potter, Lela L.	May 17, 1885.
Powers, Talbot P.	January 1, 1882.
Prag, Mary	October 17, 1880.
Pratt, A. L.	September 29, 1882.
Pratt, Mary	October 17, 1880.
Pratt, Orson M.	June 7, 1883.
Pratt, Eunice C.	August 13, 1883.
Pray, Mattie J.	September 29, 1885.
Prewitt, James	March 13, 1883.
Price, Harrison	July 10, 1882.
Primm, F. P.	October 1, 1883.
Pringle, Miss Nellie	January 11, 1885.
Pyatt, Jennie	May 7, 1882.
Randall, Mrs. A. H.	February 20, 1883.
Randolph, Lucy A.	May 23, 1884.
Raney, Oren N.	May 29, 1885.
Raney, Sheldon	July 15, 1884.
Rattan, V.	May 22, 1880.
Rave, Martha	July 10, 1882.
Raven, Mary H.	January 1, 1883.
Raymond, Helen A.	September 24, 1884.
Raymond, Mary J.	September 26, 1885.
Ready, R. W.	April 23, 1885.
Reavis, Walter Scott	October 3, 1880.
Redway, Jacques W.	January 4, 1881.
Reed, Dayton A.	June, 11, 1883.
Reed, Mrs. Mary F.	July 22, 1884.
Renfro, Lewis C.	August 29, 1880.
Rees, Alma	July 1, 1885.

EDUCATIONAL DIPLOMAS—Continued.

NAMES.	Expires.
Rice, George	September 23, 1884.
Richmond, H. H.	June 29, 1884.
Righter, F. M.	January 25, 1882.
Riley, Ella	September 29, 1885.
Rise, Mrs. M. E.	January 14, 1884.
Ritter, C. M.	May 17, 1885.
Rivers, Edith	June 7, 1884.
Roach, Mrs. Edith Z.	July 28, 1885.
Roberts, B. F.	March 13, 1883.
Roberts, Lizzie	July 10, 1882.
Robinson, George E.	June 17, 1884.
Robertson, George B.	June 27, 1880.
Robinson, Mrs. S. P.	January 1, 1882.
Robinson, W. J.	July 5, 1882.
Root, Mattie E.	July 11, 1885.
Root, Miss L. A.	March 20, 1884.
Root, Leilla A.	October 5, 1884.
Ross, Jane	June 30, 1883.
Rousseau, Lida	September 3, 1883.
Rowe, Lizzie A.	September 29, 1882.
Royall, J. P.	March 13, 1881.
Royce, Ella J.	January 1, 1882.
Rubell, C. F.	July 9, 1885.
Ruddock, J. C.	October 23, 1883.
Ruggs, E. L.	July 1, 1884.
Russell, F. P.	July 11, 1885.
Russell, Mrs. L. A.	August 20, 1885.
Russell, Mary C.	June 22, 1884.
Rutherford, Mary A.	July 9, 1885.
Ryder, Miss L. E.	August 29, 1880.
Said, Ella	April 30, 1885.
Salisbury, Mary A.	November 7, 1880.
Sallinger, J. A.	November 7, 1880.
Sanborn, Allan P.	December 11, 1884.
Sankey, Mary J.	July 18, 1880.
Sarvis, G. C.	April 2, 1884.
Sanders, Samuel	March 13, 1881.
Savage, Myron H.	February 26, 1885.
Savage, Nellie H.	February 26, 1883.
Saxe, Herman A.	October 23, 1881.
Saxton, Mary L.	July 14, 1885.
Saxton, T. A.	March 13, 1881.
Scott, J. T.	March 28, 1884.
Scott, Maggie K.	April 16, 1885.
Scott, S. A.	July 15, 1884.
Seaman, E. W.	February 6, 1884.
Seavey, O. F.	May 7, 1883.
Senger, Heinrich	June 25, 1883.
Seward, Charles	June 8, 1884.
Seward, Frank D.	July 15, 1884.
Seward, R. V.	December 18, 1884.
Seward, Frank D.	April 16, 1885.
Sexton, Ella M.	March 18, 1882.
Shaw, Annie J.	August 28, 1881.
Shaw, Sebastian	April 3, 1883.
Shaw, Theodore S.	November 24, 1883.
Sherman, Ella J.	June 28, 1881.
Sherman, Miss M. F.	February 19, 1880.
Shinn, Charles H.	May 29, 1884.
Shirley, James W.	March 27, 1883.
Shuck, L. M.	March 23, 1883.
Shuey, Sarah I.	July 10, 1882.
Sickall, M. T.	January 1, 1882.
Silliman, C. H.	July 19, 1883.
Simms, J. A.	August 20, 1884.
Sisson, Caroline M.	September 24, 1883.

EDUCATIONAL DIPLOMAS—Continued.

NAMES.	Expires.
Stafford, H. E.	March 20, 1884.
Standeford, Mrs. N. D.	March 13, 1881.
Standish, H. M.	December 18, 1880.
Starling, Jennie	June 5, 1884.
Stearns, Hannah P.	January 7, 1884.
Stevens, Miss Augusta	September 30, 1884.
Stevens, Mrs. Alice A.	August 10, 1884.
Stevens, Miss Eliza	July 9, 1885.
Stevenson, Helen R.	March 18, 1882.
Stewart, Frances A.	August 29, 1882.
Stiles, R. T.	February 22, 1884.
Stineen, Emma E. C.	March 24, 1881.
Stiner, Jessie	July 1, 1885.
Stockton, Adelia	July 17, 1884.
Stone, Henrietta	March 20, 1883.
Stone, Martha	March 26, 1883.
Stone, William R.	June 22, 1884.
Stohr, Lillie	December 6, 1883.
Storey, A. Riley	June 7, 1884.
Stovall, Mrs. M. E.	September 26, 1884.
Sturgis, Olive B.	July 2, 1884.
Sturgis, S.	March 18, 1882.
Slack, Clay H.	January 21, 1882.
Slater, Miss Charlotte	May 23, 1884.
Slavan, Thos. H.	January 14, 1884.
Sloss, Miss Dora	March 19, 1885.
Smith, Annie E.	May 28, 1885.
Smith, Ansel	August 29, 1880.
Smith, Albert A.	October 26, 1882.
Smith, Mrs. Cynthia	July 2, 1884.
Smith, Frank	November 14, 1884.
Smith, Grace	October 17, 1880.
Smith, George	May 29, 1884.
Smith, James D.	November 7, 1880.
Smith, Miss Julia	June 2, 1885.
Smith, J. A.	June 17, 1884.
Smith, J. T.	August 21, 1884.
Smith, James	March 21, 1884.
Smith, Lyman	August 23, 1883.
Smith, Mary H.	October 12, 1884.
Smith, Margaret Kerr	March 21, 1884.
Smith, Nehemiah	January 14, 1884.
Smith, Rose I.	August 26, 1882.
Smith, Stanley A.	July 2, 1884.
Smith, Virginia E.	September 25, 1885.
Smith, Miss Winnie G.	November 14, 1884.
Smith, Wilburn	March 25, 1884.
Snow, T. N.	October 10, 1882.
Sommers, Mrs. Susan	October 4, 1884.
Soule, Fannie L.	October 23, 1881.
Soule, Maria L.	December 5, 1880.
Southeimer, John J.	August 7, 1881.
Spaulding, Timothy A.	April 2, 1885.
Spencer, Rebecca	August 8, 1884.
Spiers, Jennie C.	July 11, 1885.
Spooner, Alfred	June 24, 1884.
Spring, E. W.	June 17, 1884.
Spring, Fannie	January 1, 1882.
Sullivan, D. J.	March 26, 1885.
Sullivan, Miss Nora G.	May 17, 1885.
Sullivan, Mrs. Theresa M.	December 8, 1884.
Sumner, Henrietta	October 24, 1883.
Sutherland, Miss F. C.	February 19, 1884.
Swan, Amanda	July 10, 1882.
Swain, Orlando E.	March 18, 1882.
Sweeney, Edward	May 17, 1885.

EDUCATIONAL DIPLOMAS—Continued.

NAMES.	Expires.
Sweeney, S. E.	July 9, 1883.
Swasey, Alice	September 11, 1885.
Sykes, Mrs. Jane N.	June 9, 1885.
Taylor, Mary A.	May 29, 1885.
Taylor, Mrs. H. P.	May 17, 1881.
Taylor, Wm. S.	July 5, 1883.
Templeton, Carrie	March 10, 1885.
Templeton, Miss S. L.	July 6, 1884.
Tennant, J. F.	June 7, 1884.
Titchworth, J. C.	August 25, 1885.
Tiernen, Mrs. A. C.	August 27, 1884.
Tierney, Maggie A.	September 29, 1882.
Tiffany, A. J.	June 21, 1883.
Tillotson, Henry I.	January 10, 1880.
Tilton, Etta M.	January 27, 1883.
Thom, C. J.	April 2, 1885.
Thomas, Mary A.	October 23, 1881.
Thompson, Miss Etta L.	December 3, 1883.
Thompson, Miss Helena	April 19, 1885.
Thompson, Louisa	March 13, 1881.
Thompson, O. M.	December 1, 1883.
Thornton, Miss M. E.	January 11, 1885.
Thorp, J. H.	January 11, 1885.
Thurmond, G. E.	October 5, 1884.
Titus, Mary J.	September 25, 1884.
Titus, Mary J.	February 24, 1885.
Toothaker, Miss M. O.	January 1, 1883.
Tootman, Henry E.	March 20, 1883.
Towle, Miss S. G.	July 10, 1882.
Tront, Daniel H.	January 10, 1880.
Tucker, Mrs. E. R.	June 22, 1884.
Tully, James	November 14, 1884.
Tunnell, Byron J.	December 31, 1883.
Turner, H. F.	August 28, 1881.
Tyus, Mary A.	January 1, 1882.
Underwood, J. C.	January 7, 1883.
Upton, Clara E.	February 22, 1884.
Ussinger, Conrad	January 7, 1883.
Valencia, Miss Lydia	March 28, 1884.
Van Dorn, V. J.	August 29, 1880.
Van Fassen, M. L.	July 12, 1885.
Varnach, Mrs. E. P.	February 12, 1885.
Veeder, Mrs. Eliza P.	January 1, 1884.
Veits, Mrs. Mary E.	September 7, 1884.
Veroe, James	September 25, 1883.
Vincent, Mattie E.	September 25, 1883.
Wade, Mrs. S. E.	September 6, 1883.
Walbridge, Jennie M.	March 18, 1882.
Waldron, Miss Helen R.	May 21, 1885.
Waldron, S. A.	January 28, 1882.
Walker, C. M.	July 9, 1885.
Walker, Clara M.	September 11, 1885.
Walker, C. H.	June 27, 1880.
Walker, Christopher	September 19, 1885.
Walker, Cornelia	March 12, 1885.
Walker, E. H.	April 19, 1885.
Walker, E. H.	March 2, 1884.
Wall, Clara E.	November 30, 1883.
Wallace, Alma	January 1, 1882.
Wallace, G. W.	January 1, 1883.
Wallace, J. T.	September 29, 1885.
Wallace, Louis	June 10, 1884.
Walsh, Ida C.	August 31, 1883.
Walter, Carrie S.	March 27, 1883.
Walter, Emeline S.	January 1, 1882.
Ward, Mary A.	December 5, 1880.

EDUCATIONAL DIPLOMAS—Continued.

NAMES.	Expires.
Ward, S. L.	April 5, 1885.
Warnich, Jas. W.	April 23, 1885.
Warren, Miss Anna	June 22, 1884.
Warren, E. W.	September 25, 1883.
Wash, Mrs. F. L.	October 29, 1884.
Wash, W. A.	May 5, 1883.
Washburn Georgie	March 18, 1883.
Watson, N. Flotella	July 18, 1885.
Watson, Mrs. M. L.	June 8, 1884.
Watton, Mrs. Clara	October 9, 1884.
Weatherwax, Bertha	July 9, 1885.
Webb, Mrs. Mary E.	December 7, 1884.
Webb, Sallie B.	January 27, 1880.
Webber, F. E.	February 22, 1885.
Webster, Mrs. M. M.	August 24, 1883.
Weeks, Miss Annie C.	May 10, 1885.
Weeks, Geo. W.	November 29, 1882.
Weeks, Mrs. J. M.	November 13, 1884.
Weeks, M. L.	March 18, 1882.
Welch, Geo. W.	May 11, 1883.
Weir, Helen	January 1, 1883.
Wells, Addie H.	July 10, 1883.
Wells, John C.	July 1, 1884.
Wells, Joseph H.	February 8, 1881.
Welton, A. T.	February 22, 1885.
Wemple, E. L.	August 8, 1884.
Wenk, Robert E.	February 8, 1881.
West, A. C.	May 7, 1885.
Wharton, J. F.	May 19, 1883.
Wheaton, Ann S.	January 22, 1885.
Wheaton, Miss Clara	March 26, 1885.
Wheeler, Mrs. J. D.	August 26, 1882.
Wheeler, Alanson	July 22, 1884.
Wheelock, Dorcas	May 14, 1885.
White, Alice M.	January 1, 1883.
White, A. F.	August 28, 1881.
White, Clarence M.	January 4, 1884.
White, Louise E.	December 13, 1879.
White, Mattie H.	August 30, 1882.
White, Sarah	April 10, 1881.
White, Mrs. Wm.	September 6, 1884.
Whitehurst, Thos. W.	February 26, 1883.
Whirlow, Miss H. E.	June 7, 1884.
Wible, Anna E.	October 1, 1883.
Wible, Miss Julia T.	September 23, 1884.
Wickes, John T.	March 18, 1882.
Wideman, James	September 22, 1881.
Wilber, Miss Kate	August 21, 1884.
Wilber, E. W.	March 13, 1883.
Wilber, Mrs. M. C.	November 2, 1884.
Wilson, Mrs. E. A.	October 2, 1882.
Wilson, George W.	February 22, 1884.
Wilson, H. C.	March 13, 1883.
Wilson, Sarah M.	March 29, 1883.
Wilson, W. R.	April 11, 1884.
Winchester, Mrs. W. H.	December 18, 1884.
Wirtz, Kate M.	June 29, 1884.
Witherow, Samuel N.	May 29, 1885.
Withington, Augusta	April 3, 1883.
Wixon, J. S.	July 3, 1884.
Wolverton, Bruce	December 31, 1883.
Wood, C. F.	September 29, 1882.
Wood, Jessie	October 22, 1882.
Wood, Mrs. N. A.	July 10, 1881.
Wood, Susie	July 1, 1885.
Woodman, Charles A.	May 10, 1885.

EDUCATIONAL DIPLOMAS—Continued.

NAMES.	Expires.
Woodman, Mrs. C. H.	November 24, 1883.
Woods, Miss Bettie	March 19, 1885.
Woods, James L.	July 1, 1884.
Woods, Miss Theo.	May 5, 1883.
Woodward, M. W.	March 15, 1885.
Woodward, Mrs. N. Z.	August 7, 1881.
Woodward, M. W.	February 8, 1885.
Woodworth, Mrs. J. E.	December 13, 1879.
Woodworth, Mrs. J. W.	June 17, 1884.
Wool, Hattie	August 7, 1881.
Worth, Mrs. L. G.	April 30, 1885.
Wozencraft, W. R.	April 22, 1882.
Wright, Mrs. Ada E.	July 7, 1885.
Wright, C. C.	December 12, 1883.
Wright, Isaac	January 1, 1883.
Wright, J. M.	January 1, 1882.
Wright, Mrs. M. S.	May 29, 1885.
Wythe, Sarah J.	March 18, 1882.
Yager, Myron	December 18, 1884.
Yarnall, Bennett	December 31, 1883.
Yates, Lizzie	January 4, 1881.
Yates, W. A.	April 10, 1880.
York, John, Jr.	July 3, 1884.
Young, Albert J.	July 30, 1884.
Young, Mrs. M. J.	October 11, 1884.
Young, Nestor A.	August, 7, 1881.
Young, W. H.	March 22, 1885.
Young, Mary A.	July 9, 1885.
Youngman, Miss A. M.	April 23, 1885.
Zumwalt, Mrs. V. P. S.	December 10, 1884.

FIRST GRADE CERTIFICATES.

NAMES.	Expires.
Abbott, Chas. S.	December 31, 1881.
Abbott, O. L.	October 5, 1882.
Ackleson, Susan	January 1, 1880.
Adams, Lucy F.	July 17, 1882.
Adams, Mary P.	May 24, 1883.
Adamson, W. H.	January 1, 1880.
Adamson, E. T.	January 1, 1880.
Agar, Kate	January 1, 1880.
Aiken, Ada E.	December 31, 1881.
Alden, Carrie	March 29, 1883.
Aldrich, Byron L.	November 15, 1879.
Aldrich, Lelia E.	July 14, 1883.
Alexander, Rebecca	December 31, 1881.
Allen, Chas. H.	September 3, 1881.
Allen, Fannie E.	January 1, 1881.
Allen, Jessica G.	March 29, 1881.
Allen, Lulu Edna	January 27, 1883.
Allen, Louisa	June 30, 1883.
Alvord, J. B.	January 1, 1880.
Amy, Josephine	January 1, 1883.
Anderson, Irene E.	March 29, 1881.
Anderson, Julia	March 29, 1881.
Anderson, Mary	October 9, 1881.
Anderson, W. P.	January 1, 1880.
Andrew, Cyrus P.	March 18, 1880.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Angell, Emma W.	March 27, 1882.
Angier, Emma C.	January 1, 1883.
Aniser, Emilie	May 23, 1882.
Aram, Mattie L.	May 23, 1882.
Aram, W. F.	March 18, 1880.
Arrowsmith, V.	January 1, 1881.
Armstrong, Albert M.	July 11, 1883.
Armstrong, Jennie	January 1, 1881.
Armstrong, Josie R.	March 29, 1881.
Armstrong, Nellie	October 1, 1881.
Atchison, Ida	July 11, 1883.
Atkinson, E. S.	March 18, 1880.
Auld, Cecilia	March 28, 1882.
Aulls, James Taylor	January 1, 1880.
Austin, Annie	January 1, 1883.
Averill, Mrs. Anna S.	July 11, 1883.
Ayers, Leide	March 30, 1881.
Ayers, Hy.	January 1, 1880.
Babb, Mary A.	March 18, 1880.
Babcock, Dollie E.	March 30, 1880.
Badgley, O. E.	June 30, 1881.
Badgley, Mrs. S. A. B.	September 19, 1882.
Bailey, Angelo	January 1, 1883.
Bainbridge, Aug. C.	January 1, 1880.
Baker, Modena I.	March 29, 1881.
Baker, Orie	October 1, 1880.
Baker, O. E.	February 22, 1883.
Baker, W. H.	August 26, 1880.
Bamford, Mary E.	March 29, 1882.
Banks, George	November 1, 1880.
Banks, Lizzie	March 30, 1880.
Banks, Lizzie	September 22, 1883.
Bardenwerper, Gates G.	May 14, 1883.
Barbour, William R.	March 26, 1882.
Barkley, John G.	January 1, 1880.
Barnes, Miss E.	March 26, 1883.
Barnes Eudora A.	March 29, 1881.
Barnett, Nettie M.	January 1, 1883.
Barry, Annie S.	March 29, 1881.
Barry, Thomas H.	January 30, 1881.
Bartholomew, Ellis M.	June 30, 1881.
Bartling, Miss Clara	July 14, 1883.
Bassett, Jennie	January 1, 1880.
Bassett, Mary P.	March 30, 1880.
Bateman, Henry	March 10, 1883.
Bateman, J. M. K.	September 2, 1880.
Batten, Mary	September 23, 1882.
Bannan, Maggie	August 30, 1881.
Bayley, Mrs. M. C.	June 13, 1883.
Beach, J. V.	October 10, 1880.
Bean, Ella C.	December 31, 1881.
Bean, Emma H.	March 29, 1882.
Beardsley, Emma	March 29, 1882.
Beebe, Sarah M.	October 10, 1880.
Becket, Laura E.	March 29, 1882.
Beemer, Emma	January 1, 1880.
Beggs, Lizzie R.	May 14, 1883.
Belcher, Mattie L.	July 14, 1883.
Bell, Josephine	October 5, 1882.
Bell, Lizzie	June 30, 1881.
Betts, Mrs. E. J.	October 10, 1880.
Bennison, Marion B.	January 1, 1883.
Bentley, S. E.	March 18, 1880.
Berdine, Carrie	July 14, 1883.
Bergson, Emma E.	July 17, 1882.
Berry, J. E.	October 1, 1880.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Bertolet, Mrs. M.	July 10, 1880.
Benn, Rachel R.	February 11, 1882.
Bickford, Harley A.	July 2, 1882.
Bidwell, Walter E.	July 14, 1883.
Bigelow, Mrs. C. J.	December 31, 1881.
Bills, Allie R.	June 30, 1881.
Bills, Charles A.	July 14, 1883.
Bingham, W. H.	March 29, 1881.
Bird, Bell	March 29, 1881.
Bird, Mary	March 27, 1882.
Bishop, Cynthia M.	October 10, 1881.
Bivens, Emily	January 26, 1880.
Black, A. P.	October 10, 1880.
Black, May E.	March 29, 1881.
Black, Minnie E.	March 18, 1880.
Blackman, J. D.	January 1, 1881.
Black, A. P.	October 10, 1880.
Black, E. May	March 29, 1881.
Blackmer, Ellen	October 28, 1881.
Blackwood, Lucy B.	October 10, 1880.
Blake, Mary L.	July 14, 1883.
Blain, Charles S.	January 1, 1881.
Blanchard, J. E.	April 25, 1881.
Bland, Register W.	January 1, 1881.
Blochman, Lazar E.	July 14, 1883.
Blythe, Alice	May 23, 1882.
Boalt, Lizzie E.	October 1, 1881.
Boardman, O. F.	January 1, 1880.
Bodkin, John J.	January 1, 1880.
Bodwell, E. M.	December 31, 1881.
Bond, Ella	January 1, 1880.
Bonell, Eugenie F.	October 1, 1881.
Bonney, Sarah F.	March 30, 1880.
Booth, Ella	July 17, 1882.
Booth, May	July 17, 1882.
Boshem, Ida	June 30, 1881.
Boucher, Sadie E.	October 1, 1881.
Boulware, Millie R.	May 23, 1882.
Boyer, Annie B.	May 23, 1882.
Boyden, Edgar A.	March 11, 1882.
Brown, Miss Jennie L.	January 1, 1883.
Braddock, D. W.	October 1, 1881.
Bradbury, George F.	June 30, 1881.
Bradbury, Maggie E.	October 10, 1880.
Bradley, Flora A.	January 1, 1881.
Bradshaw, J.	July 17, 1882.
Bradshaw, Hattie	January 1, 1880.
Bragg, Lizzie	December 23, 1882.
Bragg, Rebecca H.	December 23, 1882.
Bramlet, R. H.	July 14, 1883.
Bray, W. F.	July 10, 1880.
Brechtel, W. F.	July 14, 1883.
Breed, E. P.	June 30, 1881.
Briggs, Mrs. Emma	October 4, 1882.
Brothers, G. A.	June 30, 1881.
Brower, Mrs. D. C.	June 30, 1881.
Brown, B. L.	October 4, 1880.
Brown, J. E.	July 17, 1882.
Brown, L. L.	June 30, 1881.
Brown, Mary J.	March 29, 1881.
Brown, Samuel A.	March 29, 1881.
Brown, W. H.	June 30, 1881.
Brown, William W.	May 14, 1883.
Browne, Esther	March 29, 1882.
Bruch, Louise L.	May 23, 1882.
Brumley, Miss M. J.	March 24, 1881.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Buckalew, Mary F.	January 1, 1883.
Buckalew, Minnie E.	July 14, 1883.
Buckley, Elsie	July 14, 1883.
Buckley Emma S.	March 16, 1883.
Budd, Mrs. A. S.	April 6, 1880.
Bull, Mary D.	January 1, 1880.
Bulfinch, Stephen A.	January 1, 1880.
Bunker, Carrie R.	September 22, 1883.
Burch, S. N.	December 31, 1881.
Burchfield, Miss E. M.	January 1, 1880.
Burge, Jennie	December 31, 1881.
Burns, Sarah L.	March 29, 1882.
Burrell, William E.	December 31, 1881.
Burnett, Harvey D.	January 1, 1880.
Burston, Selina G.	May 23, 1882.
Burt, A. L.	March 18, 1880.
Burton, William	March 29, 1882.
Bush, Robert E.	July 17, 1882.
Butler, A. D.	October 10, 1880.
Butler, R. D.	March 29, 1882.
Byrne, Hugh J.	January 1, 1880.
Byrod, Sarah B.	January 1, 1880.
Cady, George A.	July 9, 1882.
Cahalin, Gertrude	July 17, 1882.
Calvin, Eugene	July 10, 1880.
Campbell, Annie B.	March 30, 1880.
Campbell, Amelia E.	March 4, 1882.
Campbell, E. S.	March 18, 1880.
Canfield, Libby	July 17, 1882.
Cankenson, J. B.	March 29, 1882.
Carlisle, Mary A.	April 6, 1880.
Carnichael, P. J.	October 10, 1880.
Carnes, Marian	July 17, 1882.
Carnes, Miss Laura	
Carpenter, May	March 29, 1880.
Carpenter, Mary E.	March 29, 1882.
Carr, Jennie C.	November 1, 1882.
Carr, J. E.	October 1, 1880.
Carr, Mary E.	March 26, 1883.
Carroll, Fannie	June 16, 1880.
Carver, Henry C.	January 1, 1880.
Casey, Mary E.	June 16, 1883.
Cate, Horatio W.	October 10, 1880.
Cearly, Emma S.	May 23, 1882.
Chadwick, A. M.	March 29, 1880.
Chalmers, G. H.	December 31, 1881.
Chaloner, Louis B.	May 26, 1882.
Chamberlin, Annie E.	September 25, 1881.
Chandler, J. F.	July 31, 1882.
Chapin, Alice M.	March 20, 1881.
Chapman, Amelia R.	May 23, 1882.
Chapman, Florence A.	July 14, 1883.
Chesbro, Mary	October 15, 1882.
Chesbro, Mary C.	March 22, 1883.
Chestnut, J. G.	October 10, 1880.
Chestnutwood, Lizzie	January 1, 1880.
Childs, Helen	June 27, 1880.
Chilson, D. W.	March 18, 1880.
Church, W. S.	June 30, 1881.
Churchill, Clara I.	March 30, 1880.
Clarence, Henry	July 14, 1883.
Clark, Alonzo N.	June 22, 1882.
Clark, D. C.	March 29, 1880.
Clark, Sophronia	June 30, 1880.
Clark, Y. Z.	October 1, 1881.
Clark, Charlotte K.	March 26, 1883.
Clawson, W. F.	July 10, 1880.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Clement, C. H.	January 1, 1880.
Clements, C. W.	July 14, 1883.
Clements, Charles C.	January 1, 1881.
Clifford, Carrie	March 29, 1882.
Clough, Daniel	March 29, 1880.
Clow, J. B.	January 1, 1883.
Coates, Rosa E.	July 14, 1883.
Cobb, Marietta S.	June 13, 1883.
Coburn, L. F.	October 1, 1881.
Code, Emma S.	June 30, 1880.
Coffman, Nelson B.	May 23, 1882.
Cohen, Minnie	December 31, 1881.
Colby, Mary A.	January 1, 1880.
Cole, Miss Belle	April 23, 1883.
Cole, C. A.	January 1, 1883.
Cole, Miss Frances M.	May 23, 1882.
Cole, Frances	March 18, 1880.
Cole, Miss Marie	March 26, 1883.
Cole, W. H. B.	March 29, 1882.
Coles, Ida E.	July 17, 1882.
Colvin, Charles L.	July 14, 1883.
Cornelius, Z. E.	July 10, 1880.
Cornell, Sadie	September 29, 1882.
Commman, Mrs. Josie	March 29, 1882.
Cooper, Susie V.	January 1, 1880.
Cory, Lizzie	March 12, 1882.
Corvell, Hattie	March 27, 1880.
Coult, Ella A.	January 1, 1880.
Courter, Henry F.	March 30, 1880.
Cove, Emily A.	July 12, 1883.
Cowle, Florence	March 30, 1880.
Covilland, Charles	June 30, 1880.
Cowdery, William A.	March 29, 1882.
Cozzens, Kate	May 23, 1882.
Craig, Annie C.	June 30, 1881.
Crane, Charles B.	March 18, 1880.
Crane, Ella T.	March 18, 1880.
Cranz, Sophia	January 1, 1880.
Craven, Mrs. A. R.	December 31, 1880.
Craven, Mrs. N. R.	October 1, 1880.
Crawford, Alonzo	March 29, 1882.
Cressey, Willis E.	October 10, 1880.
Crisman, W. S.	July 14, 1883.
Crittenden, J. L.	October 10, 1880.
Crofton, Emma	March 29, 1882.
Crofton, Kittie	January 10, 1882.
Cromwell, C. H.	June 30, 1881.
Cromwell, James G.	January 1, 1880.
Cronan, Delia	January 1, 1880.
Cronin, Mrs. Tulla R.	March 29, 1882.
Crook, William	December 31, 1881.
Crossett, E. F.	July 14, 1883.
Crowley, Mary	July 14, 1883.
Crowell, Mrs. L. A.	July 9, 1881.
Cullen, Fannie	June 30, 1881.
Cullinan, Lizzie W.	December 31, 1881.
Culver, Ella R.	January 1, 1880.
Cummings, David B.	June 30, 1881.
Cummings, E. C.	October 10, 1880.
Curran, Mrs. McK.	March 18, 1880.
Currier, Adelina S.	May 23, 1882.
Currey, Maggie E.	December 31, 1881.
Curtis, Cora	January 1, 1883.
Curtis, H. C.	March 18, 1880.
Curtis, Louis F.	January 1, 1881.
Cutler, John E.	March 29, 1882.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
D'Ancona, A. D.	June 30, 1883.
D'Ancona, Charlotte A.	January 1, 1880.
D'Ancona, Mary	January 1, 1880.
Daniels, Fannie A.	May 23, 1882.
Danielwitz, Charlotte E.	December 31, 1881.
Daly, Cecilia A.	October 1, 1881.
Damon, A. O.	August 12, 1883.
Davidson, Chas. E.	July 14, 1883.
Davidson, R. P.	January 1, 1880.
Davidson, W. W.	July 17, 1882.
Davis, A. B. C.	June 30, 1883.
Davis, Jennie E.	March 29, 1881.
Davis, Mary P.	July 14, 1883.
Davis, N. W.	March 30, 1880.
Darling, Cora E.	May 11, 1881.
Darling, Frank H.	June 30, 1881.
Darling, F. H.	July 14, 1883.
Deane, Kate	December 31, 1881.
Delay, D. J.	December 31, 1881.
Delaney, R.	March 30, 1880.
Denman, Ida B.	July 14, 1883.
Dennett, Ida M.	July 17, 1882.
Dennis, L. M.	March 18, 1880.
Desmond, Maggie	May 23, 1882.
Deuel, Mrs. H. S.	March 18, 1880.
Dickenson, John M.	June 30, 1881.
Dickenson, Maria	January 1, 1881.
Dickey, Herbert S.	June 30, 1883.
Dickson, James M.	October 10, 1880.
Dickson, Wm.	July 14, 1883.
Deitz, Gertrude	December 31, 1881.
Dillon, Maggie R.	July 17, 1882.
Dingle, C. E.	January 1, 1883.
Dippel, Francis H.	October 31, 1882.
Dippel, Philip	January 1, 1883.
Dodge, Henry W.	January 1, 1883.
Dodge, Zenos N.	July 14, 1883.
Dorn, Henrietta S.	May 23, 1882.
Dorn, M. A.	July 14, 1883.
Doty, James M.	June 30, 1881.
Dowling, J. E.	December 31, 1881.
Donnes, Blanche M.	March 29, 1881.
Downey, Kate	May 23, 1882.
Doyal, Wilbur	June 30, 1881.
Doyal, Wilbur	February 20, 1883.
Doyle, Etta B.	July 17, 1882.
Drew, Alex. M.	March 29, 1882.
Drinkwater, A. J.	January 1, 1883.
Driscoll, Mary	March 29, 1882.
Du Brutz, A. B.	October 1, 1881.
Dudley, Lucy J.	May 23, 1882.
Duggan, Adelaide	January 1, 1881.
Duggan, Amelia	January 1, 1881.
Duncan, Annie	January 1, 1881.
Dunham, C. F.	October 10, 1880.
Dunn, John G.	January 1, 1883.
Durst, John H.	June 30, 1881.
Dunn, Chancey H.	July 14, 1883.
Dunn, Russell L.	July 17, 1882.
Dunphy, Jennie C.	October 10, 1882.
Dunphy, Mary R.	October 31, 1882.
Dunphy, Sallie P.	January 1, 1880.
Durfy, Peter T.	July 10, 1880.
Dusing, H. F.	June 30, 1881.
Dwinell, Jennie C.	December 13, 1881.
Eames, Zilpha	December 31, 1881.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Easterday, Sarah F.	May 23, 1882.
Easton, Mrs. C. A.	April 16, 1881.
Easton, Lydia E.	March 18, 1880.
Eckhart, Ida L.	January 1, 1882.
Eddy, Daniel	July 17, 1882.
Eddy, John M.	March 18, 1880.
Eddy, Mrs. M. J.	July 17, 1882.
Edmonds, Thomas	May 24, 1883.
Edmonds, Annie C.	July 17, 1882.
Edwards, Mrs. Alcega	March 29, 1882.
Edwards, Clara D.	January 1, 1882.
Edwards, D. K.	January 30, 1881.
Edwards, Joseph	October 10, 1880.
Eggleston, Josephine	October 10, 1880.
Elder, Elva R.	January 1, 1882.
Elliott, Mary	October 3, 1880.
Ellis, Jas. W.	July 17, 1882.
Emmerson, Frank W.	January 15, 1881.
Ephraim, Adeline	July 10, 1883.
Ephraim, Janette	July 10, 1883.
Evans, Marian A.	December 31, 1882.
Evans, Mary E.	January 1, 1880.
Evarts, Edward	January 11, 1882.
Fairchild, Carrie S.	March 30, 1880.
Fairchild, Mary T.	January 1, 1880.
Farnsworth, Julia B.	January 28, 1883.
Farquar, C. S.	January 1, 1880.
Farrell, Margeret R.	May 24, 1883.
Fassett, F. R.	October 1, 1881.
Faulkner, James	April 22, 1880.
Fay, Mary A.	December 31, 1881.
Field, Carrie E.	August 18, 1883.
Filber, Thomas	March 18, 1880.
Finch, S. A.	July 17, 1882.
Finley, Sallie	May 23, 1882.
Finley, S. J.	December 31, 1881.
Finnie, Mary	March 29, 1882.
Fischer, Jennie	January 1, 1881.
Fisher, Mrs. L. P.	January 1, 1881.
Fisher, Alice A.	July 17, 1882.
Fisher, P. M.	January 1, 1883.
Fisher, S. B.	July 14, 1883.
Fitts, Elizabeth	October 16, 1881.
Fitts, Elizabeth S.	July 11, 1883.
Fitzsimmons, Rosa E.	December 31, 1881.
Felts, J. M.	January 1, 1880.
Fenton, Byron B.	July 2, 1882.
Ferguson, Florence	July 14, 1883.
Ferguson, Miss M. L.	September 7, 1882.
Flint, Albert I.	January 1, 1880.
Folger, Mrs. S. J.	January 1, 1883.
Ford, Ella M.	September 26, 1881.
Ford, Maggie	March 29, 1881.
Foskett, H. B.	January 1, 1881.
Foster, A. L.	July 14, 1883.
Fouche, Eliza P.	January 1, 1880.
Fowler, Jennie E.	January 17, 1883.
Fowser, Annie R.	May 23, 1882.
Franklin, Benjamin H.	March 30, 1880.
Frazer, Hugh W.	July 14, 1883.
French, Henry L.	July 14, 1883.
French, Mary F.	March 29, 1882.
French, Sarah T.	December 31, 1881.
Frick, G. W.	December 31, 1881.
Frisbie, P. A.	March 18, 1880.
Funston, Nina E.	January 1, 1880.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Gage, M. D.	January 1, 1881.
Galbraith, Alma I.	July 14, 1883.
Galbraith, W. H.	January 1, 1881.
Gale, Albert	August 28, 1883.
Gallagher, Addie D.	May 24, 1883.
Gallagher, Cora	July 14, 1883.
Gallagher, Fannie E.	January 1, 1880.
Galusha, N. H.	December 31, 1881.
Gambree, E. B.	June 30, 1881.
Gardiner, Maggie	March 30, 1880.
Garfield, Susie	January 1, 1883.
Garland, Abbie A.	April 10, 1882.
Garlick, Etha F.	September 30, 1881.
Garvin, Orra	September 29, 1881.
Garwood, Sarah E.	March 18, 1880.
Gavigan, Annie E.	September 22, 1883.
George, Rilla	June 1, 1880.
Gesford, H. C.	March 18, 1880.
Gibbons, Annie	January 1, 1880.
Gibson, Ford H.	February 29, 1883.
Gibson, Olive E.	May 24, 1883.
Gibson, T. Herbert	January 1, 1883.
Gibson, Will F.	October 1, 1881.
Gilechrist, Chas. A.	September 24, 1881.
Gilliam, Emma J.	March 29, 1882.
Gilluli, Ada R.	December 31, 1881.
Gilmore, Forest A.	July 14, 1883.
Gilmore, Harriet N.	March 26, 1883.
Givens, Lou	May 23, 1882.
Glidden, Cora A.	June 30, 1880.
Goggin, Emily K.	June 30, 1881.
Goin, H. M.	January 1, 1883.
Goin, J. W.	October 1, 1881.
Goldman, Julia E.	January 1, 1881.
Goldsmith, Ida	March 29, 1881.
Goldsmith, Bertha	September 22, 1883.
Goldsmith, Esther	March 18, 1880.
Goode, Richard	July 12, 1882.
Goodell, George	January 1, 1881.
Goodspeed, Florence	October 10, 1880.
Goodspeed, T. V.	January 30, 1881.
Gordon, Miss Mary A.	September 7, 1882.
Gorman, W. C.	July 10, 1880.
Gosling, Delia	March 18, 1880.
Gossman, George	July 14, 1883.
Gove, Lella B.	May 24, 1883.
Gower, Mary L.	December 31, 1881.
Gracier, Ida J.	December 31, 1881.
Gracey, Robert	January 1, 1880.
Graham, Miss E. E. V.	November 1, 1881.
Graham, Miss M. C.	July 17, 1882.
Graham, Theresa J.	March 29, 1881.
Graney, Maggie M.	January 17, 1882.
Granger, Ira L.	December 31, 1881.
Granger, W. E.	April 1, 1880.
Grant, Mary E.	November 14, 1880.
Graves, G. E.	March 29, 1881.
Graves, O. E.	January 1, 1881.
Gray, Charles R.	September 22, 1883.
Gregory, Mary F.	July 14, 1883.
Green, Ashmael	March 29, 1881.
Green, J. A.	December 31, 1881.
Greenwood, Benjamin S.	October 1, 1881.
Griffin, Charles R.	July 10, 1880.
Griffin, Elizabeth	January 21, 1881.
Griffin, Ella P.	December 31, 1881.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Griffin, Lizzie M.	September 22, 1883.
Griffin, M. J.	July 14, 1883.
Griffin, Miss F. E.	January 1, 1880.
Griffiths, H. Mary	July 14, 1883.
Grunsky, Lottie	January 1, 1881.
Gunn, C. E.	March 29, 1881.
Gunn, H. L.	March 29, 1881.
Hagen, Louise	January 1, 1880.
Hagan, Lottie	July 14, 1883.
Hagar, Charles R.	June 30, 1881.
Hagarman, A. B.	December 31, 1881.
Hail, Lucy	July 14, 1883.
Haile, Cordelia	March 29, 1881.
Hail, F. G.	January 3, 1882.
Haile, Harriet E.	May 24, 1883.
Hails, Mary Agnes	December 31, 1881.
Hails, Mary Agnes	July 14, 1883.
Hale, Susie	March 29, 1881.
Hall, George C.	October 10, 1880.
Hall, Henry C.	June 30, 1881.
Hall, Mrs. E.	January 1, 1880.
Hamill, Kate F.	January 1, 1880.
Hamilton, D. H.	January 1, 1880.
Hamilton, John E.	January 1, 1880.
Hamilton, Susie B.	May 23, 1882.
Hamilton, W. J.	January 1, 1880.
Hammond, Carrie	March 29, 1882.
Hammond, Jennie M.	May 23, 1882.
Hancock, Carrie G.	March 29, 1882.
Hand, Emma M.	March 29, 1882.
Handsaker, J. S.	March 13, 1882.
Hanlon, Amelia I.	September 22, 1883.
Hanlon, Emily C.	June 30, 1881.
Hanlon, Mary E.	June 30, 1881.
Hanscom, Si L.	May 24, 1883.
Hanson, Annie	January 1, 1880.
Hapgood, Emma	March 18, 1880.
Hanscom, Nathan C.	March 26, 1883.
Hardenberg, Belle D.	January 1, 1880.
Harkness, Mary A.	January 1, 1883.
Harkness, George Sumner	April 10, 1883.
Harrel, Mollie	January 1, 1883.
Harris, Amelia	October 1, 1880.
Harris, Eliza S.	December 31, 1881.
Harrison, Edward C.	January 1, 1880.
Harrison, James K.	June 30, 1881.
Hart, J. C.	March 29, 1882.
Hart, Jennie	October 10, 1880.
Hart, Lydia	July 14, 1883.
Hart, Mary C.	October 10, 1880.
Hartley, Jennie C.	March 29, 1882.
Haskell, Nellie M.	May 23, 1882.
Haskins, W. H.	January 1, 1883.
Haveus, H. Roscoe	September 22, 1883.
Hawkins, Mary	October 10, 1880.
Hawley, Clara	January 1, 1881.
Hawley, Fanny E.	March 29, 1882.
Haws, Joseph	January 1, 1883.
Hayburn, M. E.	July 17, 1882.
Haydon, Sarah F.	March 29, 1882.
Heald, Clara E.	July 17, 1883.
Heard, Lucy	March 29, 1882.
Heard, Susan V.	March 18, 1880.
Heaton, Mary C.	January 1, 1880.
Higgins, B. F.	March 29, 1882.
Heister, Ida May	July 14, 1883.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Henderson, J. A.	July 17, 1882.
Henderson, J. M.	May 23, 1882.
Henderson, Margaret P.	May 24, 1883.
Herndon, James M.	March 29, 1882.
Hendry, Maggie	March 22, 1881.
Hendy, Josie	July 17, 1882.
Henion, Mae E.	May 23, 1882.
Henley, Clara	January 1, 1880.
Hernan, Theresa	March 29, 1882.
Herrod, William	March 29, 1881.
Hess, Miss Tillie J.	October 31, 1882.
Hessian, Kate	January 1, 1881.
Hewes, J. N.	December 31, 1881.
Hewitt, Arthur	October 29, 1882.
Hickman, J. B.	June 29, 1882.
Hill, Nettie	January 1, 1880.
Hillman, Fannie C.	July 17, 1882.
Hillon, Emily H.	July 10, 1880.
Hilser, Kate	January 1, 1880.
Hilton, Delia C.	May 24, 1883.
Hinckley, Mrs. A. C.	February 7, 1880.
Hinds, Augusta	January 1, 1881.
Hines, Robertine B.	May 24, 1883.
Hinkley, Elizabeth C.	March 29, 1882.
Hitecock, Leroy V.	March 29, 1881.
Hobart, Addie K.	May 23, 1882.
Hobe, Sophia A.	March 29, 1881.
Hobson, Sarah P.	May 24, 1883.
Hoehholger, Harriet	February 10, 1882.
Hodgkins, Mary P.	March 29, 1881.
Hollenbeck, Minnie B.	March 26, 1883.
Hollopeter, E. E.	January 9, 1881.
Hollron, M. H.	January 1, 1880.
Hollron, Minnie F.	March 30, 1880.
Holman, S. S.	March 29, 1881.
Hopkins, Lizzie D.	October 1, 1881.
Houn, Ida M.	March 18, 1880.
Howard, Benj. F.	March 29, 1882.
Howard, Miller S.	March 26, 1883.
Howard, Placie	January 1, 1883.
Howard, Wm. B.	October 1, 1881.
Horne, E. Florence	January 1, 1880.
Howe, Mrs. L. J.	March 18, 1880.
Howe, Miss M. K.	October 10, 1880.
Howe, Newton P.	January 1, 1881.
Howland, Annie	June 30, 1881.
Hoyt, Fannie A.	January 1, 1880.
Hoyt, Jennie	March 29, 1881.
Hoyt, Mrs. M. L.	March 29, 1881.
Henderson, Myrtie C.	May 23, 1882.
Huell, W. B.	January 1, 1880.
Hughes, Addie L.	July 14, 1883.
Hughes, Ella	July 14, 1883.
Hughes, Martha M.	July 14, 1883.
Humphrey, Alice L.	May 24, 1883.
Humphrey, Ed. C.	January 1, 1880.
Humphrey, Emily	October 10, 1880.
Hunt, Cornelia N.	March 29, 1881.
Hunt, Mrs. E. G.	October 10, 1880.
Hunt, Ida L.	July 14, 1883.
Hunt, M. E.	January 1, 1880.
Hunter, Benjamin	July 23, 1881.
Huskey, Frank G.	January 1, 1883.
Hussey, Mary E.	March 18, 1880.
Hussey, Walter R.	November 12, 1882.

FIRST GRADE CERTIFICATES—Continued.

NAME.	Expires.
Hutchinson, Sarah A.	October 13, 1881.
Hyde, Abbie	July 17, 1882.
Hyde, Lucy	July 14, 1883.
Ingham, Oscar S.	August 26, 1880.
Ingraham, Duncan G.	January 1, 1881.
Irish, Ella M.	May 24, 1883.
Isaiah, S. G.	January 1, 1880.
Jackman, Ann M.	October 10, 1880.
Jackson, Clara E.	March 29, 1882.
Jacobs, Celia	September 22, 1883.
Jacobs, Miss R.	January 14, 1882.
Jacobs, Susie	December 31, 1881.
Jacobson, Josephine	October 1, 1881.
Jamison, E. H.	January 1, 1881.
Jenkins, Phebe S.	February 2, 1882.
Jenkins, Sarah B.	June 30, 1881.
Jesse, J. E.	December 1, 1881.
Jewett, Alice H. D.	December 13, 1881.
Jewett, Sarah T.	October 4, 1880.
Johns, Annie Z.	January 1, 1880.
Johnson, Isabelle	February 20, 1882.
Johnson, Katie F.	January 1, 1880.
Johnson, Minnie G.	July 17, 1882.
Johnson, Maria I.	January 1, 1880.
Johnson, Rosamond R.	March 5, 1881.
Johnson, Samuel E.	July 10, 1882.
Johnson, Wells B.	July 14, 1883.
Johnstone, Clara	July 14, 1881.
Jonas, Louisa	June 30, 1881.
Jones, Mrs. Carey W.	March 8, 1881.
Jones, Mrs. C. B.	June 1, 1880.
Jory, F. C.	July 17, 1882.
Joseph, Rebecca	July 14, 1883.
Julian, Minnie C.	March 29, 1882.
Kalisher, Francis	March 29, 1882.
Kalisher, Sophia	December 23, 1882.
Kane, George	June 30, 1881.
Kean, Annie	July 14, 1883.
Keefe, William	July 17, 1882.
Keep, Josiah	July 17, 1882.
Keith, Elizabeth B.	October 1, 1881.
Keller, L. F.	March 18, 1880.
Keller, Lizzie F.	March 29, 1881.
Kelly, Lizzie	January 1, 1880.
Kelly, Mary	May 23, 1882.
Kellogg, Charles M.	May 23, 1882.
Kellogg, F. E.	January 10, 1882.
Kelso, Iantha A.	May 23, 1882.
Kelsey, James M.	March 18, 1880.
Kelso, Luella	January 27, 1881.
Kelly, Alicia A.	January 1, 1880.
Kenady, May	January 1, 1883.
Kendall, C. S.	October 10, 1880.
Kendall, Flora C.	January 1, 1881.
Kennedy, Gano	July 17, 1882.
Kennedy, Mary	December 23, 1882.
Kennedy, N.	December 23, 1882.
Kennedy, T. E.	February 4, 1880.
Kent, Adah E.	May 24, 1883.
Kent, M. F.	July 10, 1880.
Kent, Maggie	May 23, 1882.
Kenyon, Ferdinand	March 29, 1882.
Keran, A. P.	January 7, 1880.
Keran, J. N.	January 7, 1880.
Kern, G. A.	June 30, 1881.
Kerr, R. C.	March 29, 1882.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Ketchum, Ariadne G.	March 28, 1882.
Ketchum, Mary E.	March 28, 1882.
Kidder, Sophia	January 1, 1881.
Kiefer, Frank	July 17, 1882.
King, Jessie I.	March 29, 1881.
Klink, Jennie S.	July 17, 1882.
Klippel, Amelia	July 17, 1882.
Knight, D. S.	March 29, 1881.
Knowlton, Miss L. M.	February 19, 1882.
Krans, Bertha	December 23, 1882.
Krans, Emma F.	April 10, 1883.
Krans, Sophia M. F.	December 23, 1881.
Krans, Sophia M. F.	April 10, 1883.
Labonta, Alice L.	March 18, 1880.
Laehlan, Maria	October 1, 1881.
La Grange, Anna E.	November 24, 1881.
Laird, Norton S.	January 1, 1883.
Lang, Ella	July 17, 1882.
Laland, Alice	March 29, 1881.
Laland, Blanche	October 1, 1881.
Lang, George	October 1, 1881.
Larkins, E. O.	September 4, 1880.
Larue, Peter	September 5, 1881.
Larue, W. N.	July 18, 1881.
Lastren, Louise H.	July 10, 1881.
Lawson, Lewis B.	March 18, 1880.
Leach, Lizzie S.	March 18, 1880.
Leahy, Mary	March 26, 1883.
Leary, Joseph	July 10, 1883.
Leathers, Mary	July 14, 1883.
Lehan, M. S.	January 1, 1881.
La Fevre, J. P.	August 26, 1880.
Leffler, Lizzie M.	January 1, 1880.
Leggett, W. Austin	March 29, 1880.
Leimbach, Albert E.	July 10, 1883.
Leissinger, Mrs. John	March 18, 1880.
Le Vaux, George V.	October 1, 1880.
Lewis, Ella	May 23, 1882.
Lewis, Frances	December 31, 1881.
Lewis, Julia	January 1, 1881.
Lewis, J. S.	June 30, 1881.
Lewis, Mary	March 23, 1882.
Lewis, Minnie D.	March 29, 1881.
Lichtenberg, Fannie	July 14, 1883.
Lindberg, Mrs. E. M.	January 1, 1880.
Linscott, John W.	July 10, 1880.
Lipman, Miss M.	February 19, 1882.
Little, Dillie E.	July 14, 1883.
Little, Ella J.	January 1, 1880.
Little, Miss M.	March 23, 1882.
Litton, Anna	June 30, 1881.
Lloyd, D. M.	March 18, 1880.
Lloyd, Wm.	December 31, 1881.
Locke, Ida	March 30, 1880.
Longnecker, Geo. H.	November 24, 1881.
Loop, Mrs. L. J.	January 1, 1880.
Lorain, John	August 15, 1880.
Loring, Martha W.	October 1, 1881.
Loughran, Susan	January 1, 1880.
Loueks, Annie	May 23, 1882.
Lovell, Jennie E.	March 21, 1881.
Lowe, Mrs. A.	March 18, 1881.
Lowell, Emma	October 31, 1882.
Lowell, James H.	July 14, 1883.
Lowell, J. M.	June 30, 1881.
Lowry, Agnes	March 23, 1882.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Luchsinger, Anna	July 17, 1882.
Lyman, Byron G.	January 1, 1881.
Lynch, Alice	January 1, 1880.
Lynch, W. F.	March 29, 1881.
Lynds, P. M.	July 14, 1883.
Lyon, W. J. H.	May 23, 1882.
Lytle, Cinda	October 1, 1881.
Mack, Oscar E.	July 14, 1883.
Madden, Agnes G.	December 31, 1881.
Madden, Mary A. L.	May 23, 1882.
Magnen, Ella	January 1, 1880.
Maguire, Mary	January 1, 1880.
Mahoney, Mary A.	July 10, 1883.
Main, W. Frederick	November 22, 1881.
Manning, Delia	March 29, 1882.
Manning, Irene E.	July 17, 1882.
Marchant, Lizzie	January 1, 1880.
Marchant, L. C. V. A.	January 1, 1880.
Martin, Charles Q.	April 6, 1880.
Martin, George M.	July 14, 1883.
Martin, Julia	February 14, 1881.
Martin, James S.	June 30, 1881.
Martin, Sarah E.	May 23, 1882.
Martin, Kate Nelson	May 26, 1883.
Martling, James A.	October 10, 1880.
Mason, G. H.	July 14, 1883.
Mathews, Mrs. E. W.	December 1, 1881.
Mathews, M. E.	January 1, 1880.
Matheson, Grace	October 1, 1881.
McAdams, W. C.	March 29, 1882.
McBroom, Alva	July 10, 1880.
McCann, Margaret E.	May 24, 1883.
McCann, Maria	January 1, 1880.
McCarthy, Katie	October 10, 1880.
McCarthy, Nettie R.	January 1, 1880.
McCarthy, Nellie M.	March 29, 1882.
McClellan, J. L.	March 18, 1880.
McClellan, Flora	July 14, 1883.
McClenahan, D. A.	January 1, 1881.
McClure, Henry C.	January 1, 1883.
McClymonds, J. W.	June 30, 1881.
McConnell, Miss H.	October 1, 1881.
McConnell, Ophelia	April 6, 1880.
McConnell, Ophelia	January 28, 1882.
McCowan, Blanche	March 28, 1881.
McCoy, A. M.	January 1, 1880.
McCroskey, R. C.	July 10, 1880.
McCulloch, H. B.	March 29, 1881.
McDermott, Annie F.	January 1, 1880.
McDonald, G. C.	July 14, 1883.
McDonald, Mary M.	October 18, 1882.
McDonald, Addie	March 18, 1880.
McDonald, Kate	March 30, 1880.
McDorrill, T. K.	June 30, 1881.
McElroy, Nellie	October 1, 1881.
McFarland, Nellie F.	June 30, 1881.
McGee, Zelos F.	March 30, 1882.
McGehee, Anna P.	June 30, 1881.
McGeough, Mary V.	January 1, 1880.
McGregor, Annie	August 29, 1883.
McIndoe, Charlotte	July 10, 1880.
McKinstry, Clara	January 1, 1881.
McKenzie, John	July 14, 1883.
McLaren, Anna M.	July 17, 1882.
McLaughlin, Aggie	January 1, 1880.
McLaughlin, M.	March 18, 1880.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
McLaughlin, Maria D.	January 1, 1880.
McLean, Alex.	March 20, 1881.
McLean, Charlotte	May 24, 1883.
McLean, Dugald	January 1, 1881.
McMillin, Lizzie	July 26, 1882.
McMillan, W. J.	June 30, 1881.
McMullan, Susan	March 30, 1880.
McNamer, John P.	January 1, 1880.
McPhee, Mary V.	March 29, 1881.
McPherson, Mrs. W.	January 1, 1880.
McQuiddy, W. R.	March 29, 1882.
McStay, Josephine	March 26, 1881.
McVenn, Miss G. E.	July 14, 1883.
Meads, Simeon P.	June 30, 1881.
Meek, Annie P.	April 6, 1880.
Megahan, Ambrose	July 17, 1882.
Megerle, Lisetta	May 23, 1882.
Menges, Rosetta M.	January 1, 1883.
Meridith, Chas. T.	December 31, 1881.
Merrill, Mary K.	January 1, 1881.
Merritt, Geo. W.	May 24, 1883.
Merritt, Isabel	March 18, 1881.
Merwin, Belle E.	May 24, 1883.
Merwin, Chas. E.	July 2, 1881.
Meyer, Annie L.	December 31, 1881.
Miles, Mrs. S. A.	October 10, 1880.
Miley, Annetta	March 26, 1881.
Miller, Amanda	March 28, 1882.
Miller, Chas. W.	March 29, 1882.
Miller, Emma J.	January 1, 1880.
Miller, Mrs. E. K.	January 1, 1880.
Miller, F. J.	January 1, 1882.
Miller, Ida V.	March 29, 1882.
Miller, J. H.	January 1, 1881.
Miller, Rosa	January 1, 1880.
Miller, Sarah E.	March 26, 1881.
Mills, Alice	January 1, 1881.
Miner, Alida	May 23, 1882.
Minor, Grace D.	March 29, 1882.
Mitchell, Mrs. E. E.	July 2, 1881.
Mitchell, Katie	March 30, 1880.
Moase, Phebe F.	January 28, 1880.
Mobeek, Charlotte F.	March 19, 1881.
Moek, Alonzo	January 1, 1883.
Moody, Ella	January 1, 1880.
Montgomery, Annie	January 1, 1880.
Moore, Fannie A.	January 1, 1880.
Moore, Kate	March 29, 1881.
Moore, Lulu L.	March 29, 1881.
Moore, Maggie	October 1, 1881.
Moore, Maggie	June 30, 1881.
Moore, Mary	March 18, 1880.
Moore, Matilda A.	July 17, 1882.
Moore, Mathew J.	January 1, 1883.
Moore, Susie D.	March 29, 1881.
Morey, Sabria E.	March 26, 1883.
Morford, Kate	June 20, 1883.
Morgan, Mary Augusta	January 11, 1883.
Moroney, Mary E.	January 1, 1880.
Morrill, Mary K.	January 1, 1880.
Morris, C. W.	June 30, 1881.
Morrison, Ellen N.	January 1, 1880.
Morrison, Mary E.	July 14, 1883.
Morrissey, Mrs. M.	January 1, 1880.
Morrow, J. A.	July 14, 1883.
Morse, Georgia C.	March 29, 1882.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Morton, Carrie L.	October 10, 1880.
Moulthrop, Mary S.	May 23, 1882.
Muir, Mary M.	May 24, 1883.
Mulgrew, Mary Jane	October 31, 1882.
Munday, M. E. C.	January 1, 1881.
Munson, John P.	July 18, 1880.
Murch, Clara	May 23, 1882.
Murch, Lila	March 30, 1880.
Murek, Catrina	March 28, 1881.
Murdock, Ella	March 18, 1881.
Murdock, Grace R.	May 24, 1883.
Murdock, Maria E.	March 28, 1882.
Murman, Frank T.	January 1, 1883.
Murphy, C. H.	August 26, 1880.
Murphy, Isabella M.	April 10, 1882.
Murphy, Nellie	March 18, 1880.
Murray, Cecil Adelaide	June 21, 1881.
Murray, George D.	October 1, 1881.
Murray, Maggie	January 1, 1880.
Murrell, Mrs. M. D.	January 1, 1880.
Myrick, George F.	June 4, 1881.
Nash, John C.	December 31, 1881.
Neal, Robert J.	October 1, 1881.
Neary, Annie J.	April 19, 1883.
Needham, H. Brier	January 1, 1883.
Nelson, Lucy S.	May 23, 1882.
Newberry, Hattie K.	January 1, 1880.
Newcum, William A.	May 24, 1883.
Newell, E. C.	December 31, 1881.
Newell, Theresa	March 29, 1881.
Newell, W. Edward	March 29, 1882.
Newmark, Delia	March 29, 1881.
Nesbitt, Jennie	January 1, 1881.
Nickerson, W. A.	August 28, 1880.
Norris, Laura B.	March 18, 1880.
Norton, H. B.	December 31, 1881.
Nunan, Mrs. M. A.	September 22, 1883.
Oakley, Isabella	January 1, 1881.
O'Brien, Francis M.	May 23, 1882.
O'Brien, Lucy C.	January 1, 1883.
O'Connor, Richard	July 14, 1883.
Ogden, George W.	May 24, 1883.
O'Hara, Kate F.	March 30, 1880.
O'Hara, Mary L.	May 24, 1883.
Oldham, Mrs. T.	June 30, 1881.
Oman, G. W.	October 10, 1880.
O'Meara, Joanna M.	July 14, 1883.
O'Neil, J. G.	March 29, 1881.
O'Neil, Mary L.	June 30, 1881.
O'Neil, Eugene	November 4, 1882.
Orton, Alice G.	January 1, 1883.
Osborne, C. V.	March 29, 1882.
Otis, C. S.	January 1, 1883.
Overacher, Alice P.	March 29, 1881.
Owen, H. D.	January 30, 1881.
Owen, Phebe R.	January 2, 1880.
Packard, Lizzie A.	December 23, 1882.
Padden, Hattie M.	July 14, 1883.
Padden, R. A.	March 29, 1882.
Paine, Miss Alice V.	January 1, 1883.
Paine, Charles R.	December 31, 1881.
Palmer, Hettie A.	October 1, 1881.
Panabacker, C. H.	October 1, 1881.
Panabacker, E. E.	March 29, 1882.
Pardee, Miss C. T.	November 26, 1882.
Parker, Miss A. J.	January 1, 1880.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Parker, Lizzie	March 29, 1882.
Parker, Lizzie Adele	March 29, 1882.
Parker, Matilda	April 6, 1880.
Parr, John T.	March 18, 1880.
Parshall, Olive A.	January 1, 1880.
Pascoe, William, Jr.	March 26, 1883.
Patchell, Virginia	January 1, 1881.
Patton, Herbert	November 4, 1880.
Patton, Jessie	January 1, 1881.
Patterson, Alma	March 29, 1881.
Patterson, Eliza	January 1, 1880.
Patterson, John	January 1, 1883.
Patton, Libbie H.	July 17, 1882.
Patton, Mattie	July 14, 1883.
Pearce, Mary E.	September 24, 1881.
Peck, Kate E.	December 31, 1881.
Peckham, Mary A.	March 30, 1880.
Peckham, Louis	May 24, 1883.
Peckham, Miss M. J.	March 18, 1880.
Peckham, Mary A.	March 30, 1880.
Pelham, Mrs. M. E.	January 1, 1880.
Pendergast, Coloma C.	July 14, 1883.
Penniman, Helen N.	March 30, 1880.
Perkins, Bishop	January 1, 1883.
Perry, E. H.	July 17, 1882.
Perry, Grace H.	September 22, 1883.
Perry, Kate A.	May 23, 1882.
Persing, Georgia	February 24, 1882.
Peterson, Miss Ann	March 29, 1882.
Pettit, E. T.	July 5, 1881.
Pettit, E. T.	May 23, 1882.
Pfeiffer, Laura	July 10, 1883.
Phalin, A. M.	March 29, 1881.
Phelps, Alta C.	July 14, 1883.
Phelps, Augusta M.	March 13, 1881.
Phelps, Augusta M.	March 13, 1883.
Phelps, Neil S.	June 22, 1882.
Phillbrook, H. W.	October 1, 1881.
Pierce, Nellie E.	June 30, 1881.
Pieser, Flora	January 1, 1880.
Pinkham, Ella M.	January 1, 1881.
Piper, Lillian A.	July 17, 1882.
Poage, Delia S.	September 3, 1881.
Polhemus, Mary E.	January 1, 1883.
Pollard, W. D.	January 1, 1880.
Pond, Lillian C.	May 23, 1882.
Porter, John N.	September 24, 1881.
Potter, Harriet A.	January 1, 1880.
Powers, Ambrose M.	March 29, 1882.
Powers, Charles H.	July 14, 1883.
Powers, Mattie K.	January 1, 1881.
Pratt, Abbie E.	March 29, 1882.
Pratt, Annie E.	January 1, 1881.
Pratt, Eunice C.	January 1, 1881.
Pratt, Orson M.	March 30, 1880.
Pratt, Orson M.	May 23, 1882.
Prengle, Miss Nellie	January 11, 1883.
Preston, Flora	September 21, 1881.
Prewitt, James	January 1, 1880.
Primm, E. P.	July 10, 1880.
Pringle, Nellie	July 10, 1880.
Pritchard, Mrs. S. M.	October 10, 1880.
Pritchard, V. P.	July 27, 1880.
Purdy, Carlton	July 14, 1883.
Pyatt, Jennie	March 18, 1880.
Quimby, Minerva	March 29, 1881.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Radford, Cassie M.	July 17, 1882.
Ramsey, William C.	July 22, 1883.
Ramsey, William S.	June 30, 1881.
Randall, Miss F. E.	March 18, 1880.
Raney, Addie M. C.	May 24, 1883.
Raney, Oren N.	May 23, 1882.
Raney, Sheldon	March 30, 1880.
Randolph, T. N.	June 30, 1881.
Randolph, Violante	January 1, 1883.
Rann, Emily	January 1, 1883.
Ray, Georgia	May 24, 1883.
Ray, Maria	October 10, 1880.
Raymond, Mrs. H. E.	June 4, 1881.
Raymond, Kate	May 23, 1882.
Raymond, Mary T.	July 17, 1882.
Ready, R. W.	June 30, 1881.
Rector, J. J.	March 29, 1882.
Redding, Dora C.	October 1, 1881.
Redman, Mollie	May 24, 1883.
Reed, Mary F.	January 1, 1880.
Rees, Alma	May 11, 1881.
Reynolds, S. K.	July 14, 1883.
Rich, Nellie L.	March 29, 1881.
Richard, V. P.	March 18, 1880.
Richardson, Clara C.	May 23, 1882.
Richardson, Carrie S.	June 30, 1881.
Richardson, G. A.	June 30, 1881.
Richmond, H. H.	June 30, 1881.
Riekes, R. A.	March 19, 1881.
Ries, Dora B.	March 29, 1881.
Riley, Ella	March 29, 1881.
Riley, G. E.	July 14, 1883.
Riley, J. F.	July 10, 1883.
Riley, P. F.	October 1, 1881.
Ringo, Mary Enna	May 24, 1883.
Rise, Mary E.	April 22, 1880.
Ritter, C. M.	November 27, 1880.
Rixon, Charity A.	May 4, 1881.
Robbins, Philomena	January 1, 1880.
Roberts, B. F.	March 28, 1880.
Roberts, Edith M.	March 29, 1881.
Roberts, E. W., Jr.	March 29, 1882.
Roberts, Carrie W.	January 1, 1883.
Robertson, Lizzie	July 17, 1882.
Robinson, Alice	March 29, 1882.
Robinson, G. E.	December 31, 1881.
Robinson, R. E.	October 10, 1880.
Robinson, W. J.	October 18, 1881.
Roche, Annie	July 10, 1883.
Rodden, Mary C.	March 30, 1880.
Roesslee, Julius W.	January 1, 1883.
Rogers, W. J.	March 18, 1880.
Ronald, J. T.	July 10, 1883.
Root, Ellis J.	March 26, 1883.
Root, Geo. E.	March 29, 1881.
Root, M. E.	July 17, 1882.
Roscoe, F. H.	June 30, 1881.
Rosenberg, Frances	December 31, 1881.
Ross, Jane	July 10, 1880.
Royce, Ruth	March 29, 1881.
Rubell, C. F.	July 17, 1882.
Ruby, Virginia C.	January 1, 1880.
Rucker, Mary E.	May 23, 1882.
Rugg, E. L.	March 18, 1880.
Ruggles, Lincoln	July 17, 1882.
Russell, Anna F.	July 14, 1883.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Russell, Frank P.	January 1, 1880.
Russell, Mary F.	March 30, 1880.
Russell, Sadie E.	January 1, 1880.
Rutherford, May A.	July 17, 1882.
Sabine, Minnie E.	January 1, 1883.
Sackett, Dudley P.	January 1, 1880.
Said, Ella	March 30, 1880.
Salkeld, Libby	March 29, 1881.
Sally, Mary E.	May 23, 1882.
Sanborn, Allan P.	March 29, 1881.
Sargent, Lizzie	March 4, 1883.
Sargent, W. J.	January 1, 1883.
Charles, Mrs. Julia	June 19, 1882.
Sanders, Mrs. Helen	December 31, 1881.
Sanders, Wesley	June 30, 1881.
Savage, M. H.	January 1, 1881.
Sawyer, Frances C.	March 30, 1880.
Schade, Bertha M.	January 1, 1883.
Schaeggs, Amy C. V.	August 24, 1882.
Scherer, Mary A.	July 14, 1883.
Schuck, Hermine	October 1, 1881.
Schull, Julia M.	October 1, 1881.
Schultz, Andrew H.	February 8, 1883.
Schwab, Francis	December 31, 1881.
Scriber, G. W.	July 14, 1883.
Scott, J. F.	January 1, 1880.
Scott, Lillie	January 1, 1880.
Scott, Maggie K.	March 29, 1882.
Scott, O. A.	March 29, 1881.
Scott, W. S.	March 24, 1881.
Seaman, Elbert	September 26, 1881.
Seaver, H. N., Jr.	June 30, 1881.
Seavey, Minnie	May 23, 1882.
Seavey, Mabel	March 29, 1882.
Seeley, E. A.	March 29, 1882.
Seeley, Nettie B.	March 29, 1882.
Selleck, Nettie	December 31, 1881.
Selling, Eugenie	March 29, 1881.
Selling, Nathan	March 29, 1881.
Senger, Heinrich	July 10, 1880.
Seward, Martha H.	May 17, 1883.
Seward, R. V.	July 20, 1881.
Seymour, E. M.	March 29, 1882.
Shafter, A. C.	March 29, 1882.
Shaner, John J.	March 29, 1882.
Sharp, Susannah R.	April 25, 1881.
Shaw, Mrs. M. M.	March 18, 1880.
Shaw, Sebastian	March 30, 1880.
Shearer, Flora M.	April 10, 1883.
Shearer, John	July 15, 1883.
Shekels, Maggie	March 29, 1881.
Shinn, Charles H.	March 29, 1881.
Shipman, Lily	January 1, 1881.
Shirpser, Cecilia	July 14, 1883.
Shortridge, S. M.	July 14, 1883.
Shuck, L. M.	March 18, 1880.
Siddons, Kate	March 29, 1881.
Silliman, C. H.	May 31, 1881.
Simmons, Frances E.	May 23, 1882.
Simmons, Robert J.	January 1, 1881.
Simons, J. A.	October 10, 1880.
Sisson, Caroline M.	January 1, 1880.
Smith, Annie	January 1, 1881.
Smith, Edward P.	March 29, 1882.
Smith, F. H.	June 30, 1881.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Smith, Fannie E.	June 13, 1883.
Smith, George	March 29, 1882.
Smith, Julia E.	March 29, 1882.
Smith, Eleanor M.	October 31, 1882.
Smith, Ida	July 14, 1883.
Smith, Ira E.	January 1, 1883.
Smith, Julia	January 1, 1880.
Smith, James	March 29, 1881.
Smith, J. W.	July 17, 1882.
Smith, Louise M.	July 17, 1882.
Smith, Mary H.	January 1, 1881.
Smith, Silvia A.	March 18, 1880.
Smith, Virginia E.	March 18, 1880.
Smith, Wilburn	January 1, 1880.
Smith, Jennie	July 17, 1882.
Snedaker, Eunice I.	March 29, 1881.
Snow, Ida Rose	July 14, 1883.
Snow, Melvin	June 30, 1881.
Sonnenberg, Lizzie	July 17, 1882.
Spalding, T. A.	March 29, 1882.
Squier, Emma	July 17, 1882.
Spiers, Jane C.	June 30, 1881.
Sprague, Josie E.	March 29, 1881.
Squires, Mary E.	June 30, 1881.
Stafford, Henry C.	March 29, 1881.
Stata, Annie M.	January 1, 1880.
Stearnes, Hannah P.	January 1, 1881.
St. John, Hester A.	February 2, 1882.
Stephens, Annie F.	December 31, 1881.
Stephens, John	July 10, 1880.
Stephenson, J. K.	July 14, 1883.
Stern, Augusta	May 24, 1883.
Steves, Ada	July 17, 1882.
Steves, M. Ada	May 24, 1883.
Stevens, Carrie F.	July 17, 1882.
Stevens, Eliza	July 10, 1880.
Stevenson, B. E.	January 1, 1880.
Stewart, Charlotte T.	January 1, 1881.
Stewart, Eliza J.	March 29, 1881.
Stewart, H. A.	July 14, 1883.
Stewart, Millie	July 17, 1882.
Stewart, Robt.	September 4, 1880.
Stickney, Effie L.	March 29, 1882.
Stincent, Ella E.	July 14, 1883.
Stiles, S. A.	January 1, 1883.
Stine, P. M.	July 9, 1883.
Stine, Vincent	July 20, 1880.
Stockton, Alice L.	March 30, 1880.
Stockton, Wm. W.	May 23, 1882.
Stone, Eugenia	July 14, 1883.
Stone, Ethel	March 18, 1880.
Stone, Helen M.	August 16, 1882.
Stone, Jeannette M.	March 30, 1880.
Stone, Martha	January 1, 1880.
Stone, Maria P.	January 1, 1881.
Stovall, Annie M.	June 30, 1881.
Stovall, Mrs. M. E.	June 30, 1881.
Stowell, E. M.	January 1, 1880.
Stowell, F. H.	October 1, 1881.
Strange, Jennie	July 17, 1882.
Strange, Maria	March 18, 1880.
Stratton, Lewis M.	June 4, 1881.
Stratton, Ida A.	June 30, 1881.
Street, Ella L.	July 17, 1882.
Stringfield, James	March 29, 1881.
Strode, Victor K.	September 4, 1880.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Sturges, Daniel B.	October 1, 1881.
Sullivan, C. G.	March 29, 1881.
Suber, Sadie A.	July 14, 1883.
Sullivan, D. J.	December 31, 1881.
Sullivan, Francis M.	May 24, 1883.
Sullivan, Nora G.	October 1, 1881.
Sullivan, Nellie F.	October 1, 1881.
Sullivan, Theresa M.	October 1, 1881.
Sullivan, P. M.	March 5, 1882.
Summers, Mrs. S. H.	January 1, 1880.
Summerville, Letitia	July 14, 1883.
Sutliff, Edgar C.	July 14, 1883.
Sutliff, Jennie C.	December 31, 1881.
Swain, Lizzie W.	July 17, 1882.
Swan, Emma D.	March 18, 1880.
Swasey, Alice	March 18, 1880.
Sweeney, Edward	June 30, 1881.
Sykes, Mary J.	March 18, 1880.
Tade, Laura A.	January 1, 1880.
Taft, Lillie N.	February 5, 1883.
Taylor, Mary A.	March 28, 1882.
Taylor, Mary F.	September 22, 1883.
Templeton, Carrie A.	December 31, 1881.
Tenbrook, Alice R.	January 1, 1883.
Thaxter, Clara E.	March 29, 1881.
Thayer, Rose	October 1, 1881.
Thom, Charles J.	March 29, 1882.
Thomas, Elizabeth	October 10, 1880.
Thomas, E. O.	March 18, 1880.
Thomas, Flora M.	July 17, 1882.
Thomasson, Annie E.	May 24, 1883.
Thompson, Ellie L.	January 1, 1881.
Thompson, Miss Helena	May 22, 1882.
Thompson, Florence E.	March 26, 1881.
Thompson, J. E.	July 11, 1883.
Thompson, Jessie B.	January 1, 1881.
Thompson, Mary R.	January 1, 1881.
Thompson, O. M.	August 3, 1880.
Thompson, Sadie	January 1, 1880.
Thompson, Sarah E.	March 1, 1881.
Thompson, W. G.	December 31, 1881.
Thurston, Miss Nettie	January 29, 1883.
Thorp, J. H.	March 18, 1880.
Titchworth, J. C.	December 31, 1881.
Tiedman, Dora	January 1, 1880.
Tiffany, A. J.	March 18, 1880.
Tinning, William	January 1, 1883.
Titus, Miss M. J.	September 25, 1881.
Todd, Miss Anna H.	August 19, 1882.
Torrey, Miss L. Jennie	July 21, 1883.
Townley, Emma	July 9, 1883.
Townsend, Beulah	October 1, 1881.
Toy, Emma	March 26, 1883.
Trask, Stella G.	July 14, 1883.
Treat, Julia B.	July 14, 1883.
Treat, Mary B.	July 17, 1882.
Trenholtz, Nettie	January 1, 1881.
Trescott, Mrs. M. F.	December 31, 1881.
Trimble, Caroline	March 30, 1880.
Trimble, Mollie F.	May 24, 1883.
Tully, James	October 1, 1881.
Turner, Addie	May 24, 1883.
Turner, Belle J.	March 26, 1883.
Turner, Eva	March 29, 1881.
Turner, Harriet	June 30, 1881.
Turner, Mary	March 29, 1881.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Turner, Wm. B.	July 14, 1883.
Tuttle, May C.	October 12, 1883.
Tuttle, Mira A.	January 1, 1880.
Unis, Ferdinand A.	March 29, 1881.
Upton, Clara E.	January 1, 1881.
Usinger, Conrad	March 29, 1881.
Valencia, Lydia E.	January 20, 1881.
Van Guelder, Bertie	January 1, 1880.
Van Guelder, Lutie	March 28, 1882.
Van Fossen, L.	July 17, 1882.
Van Valkenberg, Chas.	August 25, 1883.
Varnach, Mrs. E. P.	October 1, 1881.
Varriell, Carrie L.	July 14, 1883.
Vercoe, James	January 1, 1880.
Vincent, M. E.	July 10, 1880.
Vinzent, Carrie A.	January 1, 1883.
Vivian, T. J.	December 31, 1881.
Wade, Nettie	June 30, 1881.
Wade, S. E.	September 6, 1881.
Wakefield, Claude B.	May 24, 1883.
Waldron, Helen R.	January 1, 1880.
Walker, Cornelia	June 30, 1881.
Walker, Clara M.	March 29, 1881.
Walker, C. M.	July 14, 1883.
Walker, C. M.	July 17, 1882.
Walker, E. H.	March 2, 1882.
Wallace, Clarence H.	July 14, 1883.
Wallace, J. T.	December 31, 1881.
Wallis, Florence L.	June 30, 1881.
Walton, Clara	March 18, 1880.
Warboys, John W.	July 10, 1880.
Ward, Alice B.	September 22, 1883.
Ward, Edith Z.	January 15, 1881.
Ward, Geo. F.	December 31, 1881.
Ward, L. S.	March 29, 1882.
Ward, Wilber	June 8, 1881.
Warnick, James W.	January 1, 1880.
Warren, E. W.	March 18, 1880.
Warren, Geo. Watters	May 4, 1882.
Warring, Hattie B.	May 23, 1882.
Washburne, Georgia	March 18, 1880.
Waterbury, Charles	January 1, 1880.
Watkins, Florence M.	March 10, 1883.
Watson, Flotilla N.	January 4, 1882.
Watson, Mary	January 1, 1880.
Watson, Mrs. M. L.	May 22, 1882.
Watrous, Minetta	March 29, 1882.
Way, Mary Alice	January 1, 1880.
Wear, Belle A.	March 18, 1880.
Weatherwax, Bertha	July 17, 1882.
Weaver, J. H. G.	July 30, 1883.
Webb, Ida	March 29, 1882.
Webb, Nettie	March 29, 1882.
Webber, Fred. E.	January 20, 1881.
Webster, Reginald H.	October 1, 1881.
Weed, Helen M.	January 1, 1880.
Weeks, Mrs. J. M. L.	October 10, 1880.
Wells, Alice M.	March 26, 1883.
Wells, Geo. S.	July 17, 1882.
Wells, Harry C.	October 1, 1881.
Welsh, James E.	June 30, 1881.
Wenk, Wilbur F.	March 29, 1881.
Wentworth, Gussie M.	March 29, 1882.
Westbay, W. W.	July 17, 1882.
West, A. C.	December 31, 1881.
Westfield, J. F.	June 30, 1881.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Wharton, Ann S.	September 3, 1881.
Wharton, J. F.	January 1, 1880.
Whelan, Ella E.	March 30, 1880.
Wheeler, May L.	March 19, 1881.
Wheelock, Dorcas	March 29, 1882.
White, Alice M.	March 30, 1880.
White, Clarence M.	July 30, 1880.
White, Lily H.	June 30, 1881.
White, May F.	June 14, 1883.
White, Mrs. Wm.	August 26, 1880.
Whitely, Emma	March 24, 1881.
Whitely, Emma	March 24, 1882.
Whiting, S. P.	October 10, 1880.
Whitmore, Mrs. L.	April 10, 1883.
Whittier, Emma	January 1, 1880.
Wilber, Kate	March 18, 1880.
Wilber, E. W.	January 1, 1880.
Wiley, Maggie L.	March 29, 1881.
Willard, Rhoda C.	July 17, 1882.
Williams, A. E.	December 31, 1881.
Williams, Mrs. Ada	December 31, 1881.
Williams, Bion B.	January 1, 1883.
Williams, Carrie	May 24, 1883.
Williams, Clara B.	March 29, 1881.
Williams, Carrie	March 18, 1880.
Williams, M. E.	July 14, 1883.
Williamson, Jessie	May 24, 1883.
Willis, Wm. L.	July 14, 1883.
Wilson, Geo. W.	January 1, 1881.
Wilson, Horace	December 31, 1881.
Wilson, J. L.	September 23, 1881.
Wilson, Lewis B.	May 23, 1882.
Witherby, Emma	June 30, 1881.
Witherow, Samuel A.	January 1, 1880.
Wolcote, Emma	March 18, 1880.
Wolverton, Bruce	January 1, 1880.
Wood, Alfaretta	May 23, 1882.
Wood, Annie R.	June 30, 1881.
Wood, L. E.	July 14, 1883.
Wood, Susie M.	March 29, 1882.
Wood, Minnie J.	June 30, 1881.
Wood, William D.	January 1, 1881.
Woodbridge, Eva	October 10, 1880.
Woodbridge, Mary	January 1, 1881.
Woodbury, W. W.	March 29, 1881.
Woodland, Isabella	August 31, 1881.
Woodman, Charles A.	May 23, 1882.
Woodman, S. Marie	July 10, 1880.
Woods, Miss Theo.	March 18, 1880.
Woods, Bettie	June 30, 1881.
Woodson, Annie	May 24, 1883.
Woodson, Mary	January 1, 1881.
Woolsey, Georgie	July 14, 1883.
Workman, Oliver P.	March 30, 1880.
Worthen, George W.	July 14, 1883.
Wray, E. P.	July 17, 1882.
Wright, Mary	July 2, 1881.
Wright, William A.	July 17, 1882.
Wulf, Florence	December 31, 1881.
Wurtemberg, Marianne	March 29, 1881.
Wyatt, John O. B.	June 30, 1881.
Wythe, Margaret	January 1, 1883.
Yager, Myron	February 9, 1881.
Yarnall, Bennett	January 1, 1881.
Yates, T. M.	June 30, 1881.
York, John J.	March 18, 1880.

FIRST GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Young, W. H.	March 29, 1882.
Younger, Miss Maggie	July 18, 1882.
Youngman, A. M.	May 17, 1881.
Zastron, Louis H.	July 10, 1880.
Zumwalt, Mrs. V. P. S.	November 5, 1882.

SECOND GRADE CERTIFICATES.

NAMES.	Expires.
Ackley, Mollie E.	January 1, 1880.
Acton, William	March 18, 1882.
Adeock, Mary	March 29, 1881.
Addis, Yda Helles	March 29, 1881.
Abbie, Daniel P.	March 29, 1881.
Allen, Ada L.	July 14, 1882.
Allen, Mary	March 29, 1881.
Ambruster, Helen	December 31, 1880.
Anderson, Bessie	December 31, 1880.
Anderson, Christienne	March 22, 1882.
Anderson, Emma M.	May 22, 1880.
Anderson, J. H.	January 1, 1882.
Angel, Lucy B.	March 21, 1880.
Anthony, Sallie M.	January 1, 1880.
Appleby, Kate	May 24, 1882.
Arndt, Clara	October 1, 1880.
Arndt, Clara	March 29, 1880.
Ashley, M. Alice	October 1, 1880.
Ashley, Marian	March 29, 1880.
Ashmead, Lillian J.	July 14, 1882.
Ashton, John	March 17, 1880.
Asquith, Ann	May 24, 1882.
Auld, Eliza F.	March 29, 1880.
Bachelder, Emma F.	September 22, 1881.
Bacon, Mrs. A. A.	July 10, 1882.
Bailey, Lydia A.	January 16, 1881.
Baldwin, Josie E.	July 20, 1881.
Ball, Eunice	January 1, 1882.
Ball, Mattie C.	July 17, 1881.
Barber, Maggie A.	July 14, 1882.
Barbour, Emma	March 29, 1881.
Bardenwerper, Katie	May 23, 1881.
Baright, Helen D.	May 24, 1882.
Barr, Ann F.	March 29, 1881.
Barrows, Annie W.	July 14, 1882.
Bartholomew, Rachel	March 22, 1882.
Beckwith, Nathan	January 1, 1880.
Beckworth, Mary	March 29, 1881.
Beggs, J. D.	July 14, 1882.
Bell, Lizzie	March 29, 1880.
Bennett, Ida	January 25, 1882.
Bennett, Minnie E.	October 1, 1880.
Benson, Henry	January 1, 1882.
Bentley, George H.	October 1, 1880.
Bernard, Ida L.	December 14, 1881.
Bethell, Laura	May 23, 1881.
Berry, James H.	January 10, 1880.
Bibbins, Alice C.	March 29, 1881.

SECOND GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Bice, Mrs. M. A.	August 22, 1881.
Birch, Mary F.	June 30, 1880.
Bishop, Charles E.	October 1, 1880.
Bixby, Maggie C.	March 18, 1882.
Block, Valence V.	July 17, 1881.
Blythe, Alice	March 29, 1880.
Bodwell, E. M.	June 30, 1880.
Bodwell, Harry W.	June 30, 1880.
Boggs, Mary F.	July 17, 1881.
Boland, Jeanne M. H.	January 1, 1880.
Bonnard, Helen A.	April 10, 1881.
Booth, Ellen N.	October 10, 1880.
Booth, Ella N.	January 1, 1880.
Booth, Mary	December 31, 1880.
Booth, Mary	March 29, 1881.
Bowman, Mary S.	May 24, 1882.
Boyle, Mary E.	September 20, 1882.
Brady, Annie M.	May 24, 1882.
Bradley, Mary	July 17, 1881.
Brechtel, W. F.	July 14, 1882.
Brett, Mabel	October 1, 1880.
Brett, E. W.	April 4, 1881.
Bristol, Helen G.	March 29, 1881.
Brown, C. L.	October 10, 1882.
Brown, Emma	October 1, 1880.
Brown, Ellis C.	March 29, 1880.
Brown, Jennie L.	June 30, 1880.
Brown, Frances A.	May 24, 1882.
Brown, L. Jennie	July 17, 1881.
Brown, Leroy	July 26, 1881.
Brown, L. W.	October 1, 1880.
Brown, Sarah A.	March 18, 1882.
Brown, Rosa	March 29, 1881.
Brown, Robert J.	May 23, 1881.
Brown, William W.	January 1, 1880.
Burbank, Emma L.	July 14, 1882.
Burke, Kittie	July 14, 1882.
Burger, Mary E.	May 26, 1882.
Burgine, Eugene M.	July 14, 1882.
Burks, J. H.	July 11, 1882.
Burke, Kate J.	October 1, 1880.
Burns, Hattie	March 29, 1881.
Burrell, Wesley J.	January 1, 1882.
Burrell, W. J.	July 14, 1882.
Burrows, Abraham F.	July 17, 1881.
Burston, Selina	January 1, 1880.
Bush, Lizzie R.	January 1, 1880.
Bush, Lizzie R.	March 29, 1880.
Butler, Faustina	December 31, 1880.
Butler, Benj. F.	June 30, 1880.
Cady, Mary C.	October 1, 1880.
Cahlahan, Gertie	March 29, 1881.
Caler, Annie	March 29, 1881.
Campbell, C. W.	July 17, 1881.
Campbell, Lydia G.	July 10, 1881.
Cappelman, C. J. C.	January 1, 1882.
Carey, Elmer E.	May 24, 1882.
Carver, Lucinda J.	May 24, 1882.
Casey, Miss Katie	January 1, 1880.
Catlin, Amelia G.	October 1, 1880.
Cave, Hattie	May 22, 1880.
Chalmer, Louise B.	March 29, 1881.
Chapman, Adelbert R.	March 22, 1882.
Chappell, Mattie E.	March 29, 1880.
Charnock, Della	March 18, 1882.
Chase, Hartley M.	March 23, 1881.

SECOND GRADE CERTIFICATES—Continued

NAMES.	Expires.
Cheney, Jennie C.	December 31, 1880.
Chittenden, Clara	December 31, 1880.
Church, Emma F.	July 14, 1882.
Ciprico, Elenor L.	March 29, 1880.
Clapp, Alma	July 14, 1882.
Clark, Mac A.	January 1, 1882.
Clark, Robt. M.	January 17, 1880.
Clark, Walter H.	September 14, 1882.
Clayborne, Frank	August 28, 1882.
Clearly, Louise E.	March 22, 1882.
Clow, Amelia B.	May 22, 1880.
Colliman, Nelson B.	March 29, 1880.
Cohen, Alice H.	December 31, 1880.
Cohen, Carrie	October 29, 1881.
Colby, Mattie A.	May 23, 1881.
Cole, W. H. B.	September 26, 1882.
Coleman, Fannie E.	January 1, 1882.
Collier, Geo. J.	May 23, 1881.
Collins, Laura M.	July 14, 1882.
Congdon, Miss A. R.	January 16, 1880.
Conlin, Thos.	June 30, 1880.
Connors, Mary J.	August 24, 1881.
Conover, Flora	March 29, 1881.
Conrad, John G.	July 14, 1882.
Cooper, Jennie D.	July 17, 1881.
Cooper, Mary	June 30, 1880.
Cooney, Ellen	April 10, 1880.
Cope, Lizzie	March 5, 1881.
Covilland, Chas. J.	March 17, 1880.
Covington, Laura M.	December 9, 1881.
Cowles, Ida E.	December 31, 1880.
Cowley, Florence	January 1, 1880.
Cowley, Mary E.	July 17, 1881.
Cozens, Kate	March 29, 1880.
Craig, Elizabeth M.	July 17, 1881.
Crane, Martha J.	July 17, 1881.
Craue, Olive	January 1, 1882.
Crenshaw, Susie	July 14, 1882.
Crofton, Annie	July 14, 1882.
Cromwell, Effie B.	March 29, 1881.
Cromwell, Frank A.	October 1, 1880.
Cromwell, Frank A.	March 29, 1882.
Cronemiller, Mary E.	January 1, 1880.
Crook, Mary W.	December 31, 1880.
Crowley, Mary E.	March 29, 1880.
Crowley, Mary E.	October 1, 1880.
Crump, Minnie E.	January 1, 1882.
Culverwell, Kate	March 29, 1880.
Currier, Adeline S.	March 29, 1880.
Curry, Maggie	October 1, 1880.
Curtis, Corinna	July 14, 1882.
Curtis, J. F.	March 29, 1881.
Curtis, Ada M.	March 29, 1880.
Dabney, Martha	December 31, 1880.
Daley, Adelaide	May 24, 1882.
Daley, Mary	March 29, 1880.
Danks, Julia A.	January 1, 1880.
Darby, Mary	July 17, 1881.
Davis, Emma	January 25, 1882.
Davis, Rose A.	July 14, 1882.
Deal, Wm. C.	July 14, 1882.
Deering, James H.	July 14, 1882.
De Forrest, Priscilla L.	July 14, 1882.
Delano, Carrie C.	March 29, 1880.
Delay, M. C.	January 1, 1880.
Depeller, Jacob	December 31, 1880.
	March 27, 1880.

SECOND GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Depeller, Jacob	March 29, 1882.
De Sasset, Henrietta	May 24, 1882.
De Zaldo, Maria T.	January 1, 1882.
Dickenson, Everett C.	September 11, 1882.
Dingle, C. E.	January 1, 1880.
Doherty, Emma L.	March 29, 1881.
Donovan, Ella	May 23, 1881.
Donovan, Mary	June 30, 1880.
Doom, Fannie	June 30, 1880.
Doran, Alice R.	May 24, 1882.
Doran, Alice R.	July 14, 1882.
Dorsey, Mary L.	July 10, 1881.
Doud, Agnes	July 17, 1881.
Douglas, Jas. T.	March 29, 1880.
Dowling, Jennie E.	October 1, 1880.
Dresser, Alice	July 17, 1881.
Driscoll, Mary	January 1, 1880.
Dunn, James L.	July 17, 1881.
Duncan, Belle M.	June 30, 1880.
Dunn, Chancey H.	January 1, 1880.
Dwyer, Annie M.	October 1, 1880.
Dye, A. J.	March 29, 1881.
Eckardt, Ida L.	March 29, 1881.
Edwards, Priscilla	January 1, 1882.
Egenhoff, W. D.	March 18, 1882.
Ekler, Ettie S.	March 29, 1881.
Ellis, Coe C.	July 14, 1882.
Ellis, Samuel M.	March 29, 1881.
Emery, Cordelia	June 30, 1880.
Erkson, Louisa A.	May 24, 1882.
Erzgrabber, Emma	October 1, 1880.
Estell, Lovina	May 24, 1882.
Everett, Rose A.	May 24, 1882.
Everhardt, Emma A.	May 23, 1881.
Evans, Rose	July 14, 1882.
Fahey, John M.	July 17, 1881.
Fallon, Kate	January 1, 1880.
Farley, Cornelia M.	August 20, 1882.
Farrell, Mary	January 25, 1882.
Fay, Mary A.	October 1, 1880.
Finley, S. J.	November 27, 1880.
Fisher, Alice A.	March 29, 1881.
Fisher, Kate B.	July 14, 1882.
Fisher, P. M.	June 30, 1880.
Fisher, P. M.	July 17, 1881.
Fletcher, Nettie	July 14, 1882.
Fogg, Ella	July 12, 1882.
Folger, Miss E. L.	January 1, 1880.
Ford, Minnie L.	July 14, 1882.
Fortier, Rose	July 14, 1882.
Foster, Minnie	December 31, 1880.
Foulk, Nina A.	July 17, 1881.
Franklin, Gideon E.	January 1, 1882.
Frasee, Mattie J.	June 30, 1880.
French, H. L.	January 1, 1882.
Fried, Delia	December 31, 1880.
Fullard, Agnes	June 30, 1880.
Fuller, Hattie	January 1, 1880.
Fulton, Miss A. M.	March 18, 1882.
Furley, Fredrica	July 17, 1881.
Gaddis, Mary	July 14, 1882.
Gage, Jennie	September 5, 1882.
Gaston, George W.	January 1, 1880.
Gates, Alice A.	March 18, 1882.
Gesford, Louise	January 1, 1882.

SECOND GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Gibbs, C. Cynthia	March 21, 1880.
Giddings, Laura C.	March 29, 1880.
Giffin, E.	October 1, 1880.
Gillespie, Luella	September 2, 1880.
Gilman, Julia A.	January 1, 1880.
Gilmore, Forest A.	October 1, 1880.
Gilmore, Forest A.	March 29, 1881.
Gilmore, Forest A.	July 17, 1881.
Gladding, Lydia	July 10, 1881.
Gober, Lucie L.	January 1, 1882.
Goggin, Emily K.	March 29, 1880.
Gove, Lilla B.	May 29, 1881.
Gower, Mary L.	October 1, 1880.
Gracier, Emma F.	December 31, 1880.
Graffelman, Lucinda	October 30, 1880.
Graham, Lizzie M.	July 17, 1881.
Graham, Mollie	January 1, 1882.
Gramwell, John	March 29, 1881.
Gregory, Mary F.	March 29, 1880.
Gunn, C. E.	January 1, 1880.
Hall, George W.	July 14, 1882.
Hall, Ida	December 31, 1880.
Hamilton, Maggie	October 31, 1880.
Hamm, Sarah	July 17, 1881.
Hampton, Henry C.	June 30, 1880.
Hampton, Lizzie M.	July 17, 1882.
Haney, F. J.	January 1, 1880.
Hankenson, John B. R.	March 13, 1881.
Harby, Rosalie J.	July 17, 1881.
Harrigan, Annie	March 29, 1880.
Harrington, Julia	January 25, 1882.
Hart, Bergeie	January 1, 1880.
Hart, Lydia	March 29, 1881.
Harvey, Katie M.	July 17, 1881.
Haskins, Ida M.	December 31, 1880.
Haskins, Joseph M.	March 18, 1882.
Hatton, William H.	March 29, 1881.
Hawley, Eva	March 29, 1881.
Hawley, Eva	July 17, 1881.
Hazen, Leonora	March 18, 1882.
Hawes, Sarah E.	January 1, 1880.
Hawley, E. W.	June 30, 1880.
Hay, Luella	January 1, 1882.
Hayes, Naomi A.	May 23, 1881.
Healey, Belle	January 1, 1882.
Heard, Edwin M.	March 29, 1881.
Hendley, Mamie V.	January 1, 1882.
Henry, Fannie K.	July 17, 1881.
Henry, Libbie S.	January 16, 1881.
Henry, Margaret R.	May 24, 1882.
Henrod, John	May 23, 1881.
Hill, Alice	March 29, 1881.
Hinkelbein, Josephine	April 10, 1881.
Hitchcock, Grace B.	July 14, 1882.
Hobson, Sarah	May 23, 1881.
Hollingsworth, Emma	January 1, 1882.
Hopkins, Thomas P.	March 18, 1882.
Home, Louise	January 25, 1882.
Hornick, Nora H.	March 29, 1880.
Horshott, Andrew	October 1, 1880.
Howard, Annie L.	October 1, 1880.
Howard, Jennie F.	May 24, 1882.
Howard, Mrs. M. M.	December 31, 1880.
Huffner, Katie A.	May 23, 1881.
Hughes, Sadie	July 14, 1882.
Hunter, Rose V.	January 10, 1880.

SECOND GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Huntley, A. M.	December 30, 1880.
Hurst, G. P.	February 15, 1882.
Huskey, F. G.	January 25, 1882.
Jackman, Florence	October 1, 1880.
Jackson, Etta H.	May 23, 1881.
Jackson, George A.	October 1, 1882.
Jackson, Kate M.	May 22, 1882.
Jackson, Harriet	June 30, 1880.
Jackson, Artie J.	March 29, 1880.
Jenkins, Mary	July 14, 1882.
Jenkins, Sarah B.	March 28, 1880.
Jewett, William J.	June 30, 1880.
Johnson, Catherine E.	July 14, 1882.
Johnson, Julian W.	July 18, 1880.
Johnson, Mattie B.	July 14, 1882.
Johnson, Nettie	January 1, 1882.
Johnson, Samuel	January 16, 1881.
Johnston, Lizzie	September 22, 1881.
Jonas, Fannie E.	June 30, 1880.
Jones, Della	January 1, 1882.
Jones, Maude H.	July 14, 1882.
Jones, Newman	March 29, 1881.
Jorey, Miss Bessie	October 31, 1880.
Jorey, Miss Emma	October 31, 1880.
Jordan, Wm. E.	May 24, 1882.
Joslin, Minnie F.	June 30, 1882.
Judkins Lucia	January 24, 1882.
Julian, Minnie	January 1, 1882.
Kalisber, Sophia	March 29, 1880.
Karsky, Mirian	September 22, 1881.
Kansky, Sarah	January 1, 1880.
Kansky, Sarah	June 30, 1880.
Kelley, Thos.	October 1, 1880.
Kellogg, Chas. M.	March 29, 1880.
Kelly, Ella	July 17, 1881.
Kelsey, Sarah	May 24, 1882.
Kelso, Iretta A.	March 29, 1880.
Kendall, Emma J.	May 23, 1881.
Kennedy, Annie M.	May 24, 1880.
Kennedy, Annie M.	July 14, 1882.
Kennedy, Mary A.	October 1, 1880.
Kent, Adah E.	May 23, 1881.
Kent, Margaret A.	March 29, 1880.
Kerr, Mrs. A. B.	June 30, 1880.
Kervan, Lulu	January 1, 1882.
Kingman, Mary H.	July 14, 1882.
Kimball, Geo. H.	July 14, 1882.
Kimball, Rebecca	July 14, 1882.
Kinley, M.	June 30, 1880.
Knapp, Martha M.	May 24, 1882.
Kornig, Edward	July 17, 1881.
Krause, Fred. L.	October 1, 1881.
Lachtlin, Maria E.	March 30, 1880.
Lalande, Blanche L.	March 30, 1880.
Lane, E. K.	March 18, 1882.
Larkins, Christina	July 14, 1882.
Lawrence, Wm. H.	January 25, 1882.
Le Crone, Thomas W.	March 18, 1882.
Leek, Ira G.	January 1, 1882.
Leek, Wm. H.	July 17, 1881.
Leland, Sadellie W.	July 14, 1882.
Levy, Rebecca	July 14, 1882.
L'Hote, Mrs. M. F.	March 18, 1882.
Lingraso, Mattie A.	December 31, 1880.
Lipowitz, Ellen	July 10, 1881.
Lipp, Clara E.	January 1, 1882.

SECOND GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Little, Dillie E.	July 17, 1881.
Little, Ella J.	July 14, 1882.
Little, Miss L. B.	September 22, 1881.
Lloyd, Julius A.	July 10, 1881.
Lloyd, Marguietta B.	May 24, 1882.
Locke, Nathaniel H.	January 1, 1882.
Locke, N. H.	January 25, 1882.
Locke, Sarah.	January 25, 1882.
Loneks, Mrs. Ann	March 29, 1881.
Louderback, Lizzie	December 31, 1881.
Love, Ida M.	May 23, 1881.
Lowry, Agnes	March 30, 1881.
Lucas, Jessie D.	September 25, 1881.
Lucas, M. Ida	September 22, 1881.
Lynch, Nellie R.	July 17, 1881.
Lynch, O. J.	March 29, 1881.
Lynch, Sadie.	July 17, 1881.
Lynch, Wm. F.	April 10, 1881.
Lynds, Virginia E.	May 24, 1882.
Lynds, Denver M.	May 24, 1882.
Mack, Oscar E.	March 29, 1881.
Madan, Aimee	May 23, 1881.
Magner, Joanna	December 31, 1880.
Maguire, Rosa A.	June 30, 1880.
Manley, Geo. P.	January 15, 1880.
Manning, Irene E.	March 29, 1881.
Martin, Miss Ida	April 10, 1881.
Martin, Etta E.	January 25, 1882.
Martin, Fannie M.	May 23, 1881.
Martin, J. A.	June 30, 1880.
Martin, Jno. W.	May 23, 1881.
Masonette, Blanche	July 17, 1881.
Mattuck, Mary	March 15, 1882.
Maurer, John L.	July 17, 1881.
Maxwell, Mary E.	June 30, 1880.
Maxwell, Mary E.	July 17, 1881.
Mayers, Bessie	July 14, 1882.
McCabe, Ella	May 23, 1881.
McCleery, Annie	October 31, 1880.
McClellan, Flora	January 1, 1882.
McClellan, Flora	January 25, 1882.
McConnell, Mary F.	May 24, 1882.
McCourt, James	June 30, 1880.
McDaniell, Ella	March 29, 1881.
McDervitt, Mary	July 17, 1881.
McElroy, Nettie	January 1, 1880.
McFarland, Florence	August 31, 1880.
McFarland, Lucy M.	August 31, 1880.
McFarland, Nellie F.	July 14, 1882.
McFarland, Nellie F.	March 29, 1880.
McHenry, Mary	July 14, 1882.
McHugh, Mary	July 14, 1882.
McIntosh, Mrs. Kate	February 5, 1882.
McKell, J. E.	March 15, 1882.
McKenzie, John	June 22, 1881.
McKenzie, Lizzie A.	May 24, 1882.
McKenzie, Louisa	January 1, 1882.
McKnight, Samuel M.	March 15, 1880.
McLean, Agnes M.	July 14, 1882.
McLearn, Charlotte	May 23, 1881.
McMullan, Emily	March 29, 1880.
McMullen, Frances	March 29, 1880.
McNamara, Agnes	December 31, 1880.
McNear, L.	June 30, 1880.
McNevin, Maggie	July 14, 1882.
McPhillips, Annie	May 24, 1882.

SECOND GRADE CERTIFICATES—Continued.

Names.	Expires.
Megahan, A.	June 30, 1880.
Megahan, A.	January 1, 1880.
Merrick, J. T.	March 29, 1881.
Merrill, Mrs. M. D.	June 30, 1880.
Merrill, Mrs. M. D.	July 17, 1881.
Meredith, David M.	July 14, 1882.
Merritt, Geo. W.	July 17, 1881.
Merritt, J. S.	July 14, 1882.
Mertes, Augusta M.	May 23, 1881.
Meyer, Emma E.	July 14, 1882.
Michener, D. B.	July 14, 1882.
Miller, Emma	July 14, 1882.
Miller, Lavina L.	June 30, 1880.
Miller, Mary K.	March 29, 1880.
Millington, Seth	January 1, 1882.
Mills, Mrs. Myron	September 22, 1881.
Minor, Grace D.	December 31, 1880.
Miranda, Petra C.	June 27, 1880.
Mize, E. J.	January 1, 1880.
Mize, E. J.	June 30, 1880.
Mize, E. J.	October 1, 1880.
Mock, Arthur	March 29, 1881.
Mock, J. W.	March 29, 1881.
Moore, William P.	March 29, 1881.
Morgaustern, Eva	July 14, 1882.
Morris, Kate C.	May 24, 1882.
Morris, Lizzie L.	March 29, 1880.
Morrison, Mary E.	March 29, 1881.
Morse, Georgie C.	March 29, 1880.
Morse, Hettie	July 14, 1882.
Morton, Alfreda	May 23, 1881.
Morton, Edith	June 22, 1881.
Morton, Sarah E.	July 14, 1882.
Moses, Hattie A.	July 10, 1881.
Muir, Mary M.	May 23, 1881.
Muller, Carl	July 14, 1882.
Munday, Charles F.	October 10, 1882.
Murphy, Ella F.	May 23, 1881.
Murphy, Miss E. M.	June 30, 1880.
Murray, Anita	May 23, 1881.
Myrick, Ella	January 1, 1882.
Myrick, Lizzie B.	January 1, 1882.
Nagle, Kate F.	December 31, 1880.
Nash, A. J.	July 14, 1882.
Needham, H. Burr	January 1, 1882.
Needham, H. Burr	January 25, 1882.
Neff, M. C.	June 30, 1880.
Nelson, Adelia	July 14, 1882.
Newberry, Ellen A.	May 23, 1881.
Nichols, Lucy	March 29, 1881.
Noble, Fred.	January 25, 1881.
Norton, F. C.	January 1, 1880.
Norton, Andrea	July 14, 1882.
Novitsky, Nuna	July 10, 1881.
O'Brien, Frances	March 29, 1880.
O'Brien, Katie	March 29, 1881.
O'Brien, Katie	July 17, 1882.
O'Connell, Nettie A.	December 31, 1880.
O'Neal, Amy	January 25, 1882.
O'Neal, Agnes L.	June 30, 1880.
Orr, Lizzie A.	July 14, 1882.
Ortego, D. M.	August 4, 1882.
Orth, Clara L.	July 18, 1880.
Owen, Lucy E.	May 24, 1882.
Owen, M. C.	January 1, 1880.
Packer, Etta	June 30, 1880.

SECOND GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Parden, R. A.	October 1, 1880.
Parker, Edwin A.	October 1, 1880.
Parker, Rose A.	June 30, 1880.
Parsons, Annie	January 1, 1882.
Partsch, Herman	January 1, 1880.
Partsch, Herman	June 30, 1880.
Patton, J. R.	July 14, 1882.
Patton, Lizzie R.	March 29, 1880.
Patton, Mattie A.	September 22, 1881.
Peabody, Mary C.	January 1, 1882.
Peckham, Lois A.	May 23, 1881.
Perkins, Alice	March 18, 1882.
Perry, E. H.	October 1, 1880.
Pettit, E. T.	February 14, 1880.
Phelps, Hannah J.	July 18, 1880.
Phillips, Josie	January 25, 1882.
Phillips, Laura J.	January 1, 1882.
Pike, Anna M.	January 1, 1882.
Pond, C. Lillian	March 29, 1880.
Pope, Evelyn	January 1, 1882.
Powell, Emma C.	May 24, 1882.
Powell, Emma C.	July 14, 1882.
Pratt, William F.	May 24, 1882.
Quinn, Amelia F.	October 1, 1880.
Rademacher, Christine	May 23, 1881.
Rademacher, Christine	April 16, 1882.
Radford, Cassie M.	March 29, 1881.
Randall, Mary	July 17, 1881.
Raney, Oren N.	March 29, 1880.
Raphel, Addie L.	July 14, 1882.
Ray, Georgia	May 23, 1881.
Reeve, E. H.	October 1, 1880.
Regan, Sadie	January 1, 1880.
Reinstein, Lena A.	July 17, 1881.
Reynolds, Fannie L.	October 1, 1880.
Rhinehardt, Ida E.	May 23, 1881.
Richards, George E.	January 1, 1880.
Richardson, Clara C.	March 29, 1880.
Rickey, Mary H.	May 24, 1882.
Riley, James A.	March 29, 1880.
Rings, Emma M.	May 23, 1881.
Robertson, Margie	July 14, 1882.
Robinett, Minna	September 22, 1882.
Robinson, Emma	March 29, 1880.
Robinson, Eliza	January 1, 1880.
Robinson, Sallie A.	July 17, 1881.
Rock, Annie	January 1, 1882.
Rockwood, Josephine	January 10, 1880.
Rodgers, Mary A.	May 24, 1882.
Rodham, B.	January 17, 1880.
Rogers, Mrs. I. D.	July 14, 1882.
Rollins, Annie	July 14, 1882.
Root, Miss A. M.	August 4, 1882.
Root, Mollie E.	June 22, 1881.
Roper, Mary A.	September 22, 1881.
Ross, Jessie F.	July 17, 1881.
Ross, Leonora	January 1, 1882.
Royce, Florence	May 23, 1881.
Ruddock, Benjamin J.	December 31, 1880.
Rumery, Lizzie P.	July 14, 1882.
Russell, Carrie H.	January 1, 1880.
Ryan, F. D.	March 18, 1882.
Sallee, J. W.	December 13, 1880.
Sampson, Francis C.	October 1, 1880.
Saxton, Mary L.	July 14, 1882.
Scherer, Mary A.	June 30, 1880.

SECOND GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Schuck, Herman	June 30, 1880.
Scott, Henry W.	January 1, 1880.
Seavy, Mabel	March 29, 1880.
Selby, Emma	May 24, 1882.
Selleck, Dot	December 31, 1880.
Senter, Mary E.	May 24, 1882.
Shannon, Kate M.	January 1, 1880.
Sharp, Mattie A.	March 29, 1881.
Shaw, Mattie J.	October 1, 1880.
Shepherd, Addie C.	October 1, 1880.
Short, M. L.	October 1, 1880.
Shupser, Cecilia	July 17, 1881.
Simpson, Cora A.	May 24, 1882.
Simpson, J. H.	March 17, 1880.
Singly, Helen A.	January 6, 1882.
Slayback, Eurilla L.	January 1, 1882.
Smiley, Helen M.	July 14, 1882.
Smith, Addie G.	July 14, 1882.
Smith, L. M.	June 30, 1880.
Smith, La Grande S.	July 17, 1881.
Smith, Mary E.	January 25, 1882.
Smith, Nellie L.	January 1, 1882.
Smith, W. J.	July 14, 1882.
Smith, William G.	May 23, 1881.
Smithurst, Sophie W.	May 24, 1882.
Smyth, Anna	June 30, 1880.
Smyth, Anna M. L.	June 30, 1880.
Smyth, Anna M.	January 1, 1880.
Smyth, Kate	January 1, 1882.
Somerset, Clara J.	January 1, 1880.
Somerset, Clara J.	March 29, 1881.
Soule, Maude	March 29, 1881.
Spangenberg, Nettie E.	May 23, 1881.
Spencer, Rebecca	June 27, 1881.
Spear, Cora L.	May 24, 1882.
Spooner, Ida	October 1, 1880.
Sproul, Hattie B.	July 14, 1882.
Squier, Emma	October 1, 1880.
Squier, Emma	March 29, 1881.
Squiers, Isabel	May 23, 1881.
Stafford, R. L.	January 1, 1880.
Stanford, Bell M.	January 1, 1880.
Stanley, Albert	June 30, 1880.
Stanley, Albert	July 17, 1881.
Stauder, Kate L.	March 29, 1881.
Stephenson, J. R.	March 29, 1881.
Stephenson, Nancy J.	May 23, 1881.
Stephenson, N. Jennie	July 17, 1881.
Stern, Augusta	May 23, 1881.
Steves, Ida	May 23, 1881.
Stewart, Jessie M.	January 16, 1881.
Stewart, John	January 1, 1880.
Stewart, Louisa	July 14, 1882.
Stewart, Louisa	July 17, 1881.
Stipp, George	July 17, 1881.
Stivers, Lanor	July 14, 1882.
Stockton, L. D.	January 1, 1880.
Stockton, L. D.	January 1, 1882.
Stockton, William	March 29, 1880.
Stone, Carrie C.	April 10, 1880.
Stone, Hannah E.	March 29, 1880.
Story, Lizzie	July 14, 1882.
Stoval, Fred. W.	March 29, 1880.
Strawbridge, Viola	June 30, 1880.
Strawbridge, Viola	October 1, 1880.
Strong, Della	March 29, 1881.

SECOND GRADE CERTIFICATES—Continued.

4

NAMES.	Expires.
Stull, C. N.	January 1, 1880.
Sullivan, Maggie	July 14, 1882.
Sullivan, Michael F.	March 29, 1880.
Sweeney, Cassie	January 1, 1882.
Sweeney, Minnie	October 1, 1880.
Sykes, Charles H.	July 14, 1882.
Tallant, Ella M.	May 23, 1881.
Talmage, Minnie	April 10, 1880.
Taney, L. K.	March 29, 1880.
Taylor, Henry	January 1, 1882.
Teel, Mary L.	May 23, 1881.
Thomasson, Annie A.	January 1, 1882.
Thompson, Mattie	January 25, 1882.
Thompson, Mrs. O. M.	December 1, 1880.
Thompson, Robert A.	January 1, 1880.
Thurston, Alice E.	March 29, 1880.
Tobin, Margaret	January 1, 1880.
Travers, Kittie J.	July 17, 1881.
Tuite, Annie M.	July 14, 1882.
Turner, Addie	May 23, 1881.
Turner, Albertine G.	July 14, 1882.
Turner, Mary	January 1, 1880.
Turrell, Emily M.	July 14, 1882.
Tuttle, Mary E.	December 31, 1880.
Tyner, John M.	July 17, 1881.
Unger, Annie	July 17, 1882.
Unger, Annie	June 30, 1880.
Van Fossen, L. J., Jr.	December 31, 1880.
Vareoe, Geo.	July 14, 1882.
Vaughn, May R.	March 29, 1881.
Vinzent, Carrie A.	January 1, 1882.
Vollman, Bertha T.	June 30, 1880.
Wadsworth, Carrie M.	January 1, 1882.
Wales, Fred. H.	January 1, 1880.
Walsh, Mary S.	September 22, 1881.
Walsh, Maggie M.	September 22, 1881.
Walton, Addie E.	July 10, 1882.
Ward, Ida M.	May 23, 1881.
Ward, S. L.	May 23, 1881.
Ward, S. L.	December 31, 1880.
Ward, Thomas B.	March 18, 1881.
Ware, Mattie M.	July 17, 1881.
Warring, Hattie	March 29, 1880.
Watterman, Waldo S.	May 24, 1882.
Wear, Emma	May 23, 1881.
Webb, Miss Delia	July 10, 1881.
Weed, Ida B.	March 29, 1880.
Weeks, Mattie A.	June 30, 1880.
Wells, Alice M.	July 14, 1882.
Wells, H. C.	July 14, 1880.
Wessell, Williamma	January 1, 1880.
Westfield, Mary	March 29, 1880.
Wetmore, Octavia	September 22, 1881.
Wheeler, Mary E.	September 22, 1881.
Wheelock, Mrs. E.	January 10, 1880.
Whitcomb, Alice H.	March 29, 1881.
Whitcomb, Jessie B.	January 1, 1882.
White, Alice J.	July 17, 1881.
White, Mrs. Mattie	December 31, 1880.
White, Mattie H.	March 29, 1881.
White, Winifred	January 1, 1880.
Whittingham, M. A.	March 29, 1881.
Wickliffe, Elvina	March 24, 1880.
Wilcox, Katie	December 31, 1880.
Wilcox, Lizzie	July 17, 1881.
Wiley, Oscar F.	July 10, 1882.

SECOND GRADE CERTIFICATES—Continued

NAMES.	Expires.
Williams, Eugene	January 1, 1880.
Williamson, Jessie	May 23, 1881.
Wilson, Julia F.	March 29, 1881.
Wilson, Lewis	March 29, 1880.
Winckley, Emma	March 29, 1881.
Winters, Ellen	July 17, 1881.
Winters, Ellen C.	July 14, 1882.
Wing, Florence D.	August 28, 1881.
Wiseman, Mary L.	September 22, 1881.
Wixon, Eugene	January 1, 1880.
Wolfe, Alice M.	July 14, 1882.
Wolfe, Ida H.	December 31, 1880.
Wood, Annie R.	March 29, 1880.
Wood, Bettie	January 1, 1880.
Woodford, Flora A.	May 24, 1882.
Woodson, Annie	May 23, 1881.
Woodward, A. P.	March 29, 1881.
Woolsey, Georgia	June 30, 1880.
Woolsey, Georgia	January 1, 1882.
Worth, Lettie M.	July 17, 1881.
Wright, Mattie A.	January 1, 1882.
Wyatt, J. O. B.	January 1, 1880.
Yehl, Josephine	March 29, 1881.
Young, Rachel	July 17, 1881.

THIRD GRADE CERTIFICATES.

NAMES.	Expires.
Allen, Mary J.	December 31, 1879.
Allen, Mary J.	July 17, 1880.
Allen, Mrs. M. E.	October 15, 1880.
Anderson, Sadie E.	January 1, 1881.
Andrews, Alida B.	March 29, 1880.
Arendt, Clara	December 31, 1879.
Armstrong, Annie	March 29, 1880.
Atterbury, Fannie L.	July 17, 1880.
Bandy, Nettie L.	March 29, 1880.
Barman, Nellie L.	January 1, 1881.
Batchelder, Alice	July 14, 1882.
Beggs, Ettie	January 1, 1881.
Bennett, Annie D.	January 1, 1881.
Bennett, Nettie	July 17, 1880.
Bentley, Mrs. J. S.	December 31, 1879.
Bentley, Mrs. J. S.	March 29, 1880.
Blackington, Cora A.	January 1, 1881.
Bockrath, Etta	March 29, 1880.
Bodkin, Mary	July 14, 1881.
Brewster, A. R.	July 14, 1881.
Brier, Miss Carrie	January 1, 1880.
Briggs, Sadie L.	March 29, 1880.
Brimhall, Maggie	March 18, 1880.
Brooks, Lena	July 14, 1881.
Brotherton, Alice S.	July 14, 1881.
Brown, Amelia	March 29, 1880.
Buckley, Lellie M.	July 17, 1880.
Burbank, Emma L.	January 1, 1881.
Burnham, Lulu	July 14, 1881.

THIRD GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Burns, Ella P.	January 1, 1881.
Burns, Sarah M.	December 31, 1879.
Butts, Etta	March 29, 1881.
Campbell, Eva	March 29, 1881.
Canfield, Libbie P.	December 31, 1879.
Camm, Marilla	January 1, 1881.
Carnes, Marion	July 10, 1880.
Case, Nellie	January 1, 1881.
Casey, Sarah M.	March 29, 1880.
Casey, Sarah M.	July 17, 1880.
Cattin, Amelia G.	July 17, 1880.
Chase, Lally R.	December 31, 1879.
Cheney, Lydia M.	July 17, 1880.
Cheney, Lizzie A.	July 14, 1881.
Claibourne, Bettie G.	July 14, 1881.
Collier, Laura	March 29, 1880.
Colton, Lena W.	July 14, 1881.
Conannon, E. H.	January 1, 1881.
Congdon, M. Frances	July 10, 1880.
Conlon, Virginia	July 14, 1880.
Corbell, Sarah L.	January 30, 1881.
Cove, Emily A.	July 17, 1880.
Cuffe, Frances A.	July 10, 1881.
Cullen, Lulu R.	July 17, 1880.
Cullen, Lulu R.	July 14, 1881.
Curtis, Cora C.	July 17, 1880.
Davis, Ellie M.	January 1, 1881.
Delany, Margaret E.	July 14, 1881.
Dillon, Mattie	July 14, 1881.
Dixon, Belle	January 1, 1881.
Dixson, May	January 1, 1881.
Dodge, Helen M.	March 29, 1880.
Dodge, Helen M.	December 31, 1879.
Douglas, Effie	March 29, 1881.
Douglas, Nellie	July 14, 1881.
Driscoll, Mary	December 31, 1879.
Dumphy, Margaretta	December 31, 1879.
Esterday, Miss S. F.	March 29, 1880.
Ebersold, Emily E.	January 1, 1881.
Ellis, Coe C.	July 17, 1880.
Elmee, Miss M.	January 1, 1881.
Enquist, Mia	July 14, 1881.
Evens, Annie	January 1, 1880.
Eyre, Fannie H.	March 29, 1880.
Feitcher, Nettie T.	July 17, 1880.
Felter, Clara M.	January 1, 1881.
Fischer, Julia	July 14, 1881.
Flury, Celine	July 14, 1881.
Fogg, Ella F.	March 29, 1881.
Folsom, Sophia	July 14, 1881.
Folsom, Sophia	July 17, 1880.
Forbes, Agnes	March 29, 1880.
Forbes, Aggie	July 17, 1880.
Forbes, Annie	July 14, 1881.
Foreade, Adelia	July 17, 1880.
Foreman, Clara	March 29, 1880.
Fowler, Laura E.	December 31, 1879.
Foye, Etta	December 31, 1879.
Franklin, Addie W.	July 17, 1880.
Franklin, Mabel	July 10, 1880.
Fried, Delia	March 29, 1880.
Frontin, Elizabeth	December 31, 1879.
Fuller, Emma E.	October 1, 1881.
Furley, Frederica	December 31, 1879.
Gallagher, Cora	June 30, 1881.
Gallagher, Jennie	July 14, 1881.

THIRD GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Garness, Belle	January 1, 1881.
Gibbs, Lena	July 14, 1881.
Getchell, Nettie	July 14, 1881.
Goldstein, Frances	July 17, 1880.
Gracier, Emma F.	January 1, 1880.
Grant, Ellen M.	July 17, 1880.
Hardy, Adelaide	January 1, 1881.
Hardy, Mary M.	January 1, 1881.
Haskins, Ada G.	December 31, 1879.
Haskins, Rosa	January 1, 1881.
Hayburn, Maggie	March 29, 1880.
Hillman, Jennie C.	March 29, 1880.
Hough, Eva	July 17, 1880.
Houston, Mary A.	October 1, 1881.
Howard, Louise D.	December 31, 1879.
Howe, Kate F.	July 17, 1880.
Hurley, Abbie	July 14, 1881.
Jenkins, Mary A.	July 17, 1880.
Johnson, Annie M.	January 1, 1881.
Keating, Mary E.	July 14, 1881.
Kean, Miss Annie	January 1, 1881.
Kellett, Dora C.	July 17, 1880.
Kennedy, Gano	March 29, 1880.
Kerr, Annie S.	January 1, 1881.
Kimball, Rebecca M.	March 29, 1882.
Kittredge, Mary W.	July 14, 1881.
Langstadler, Adeline	July 14, 1881.
Langstroth, Helen	December 31, 1879.
Larkin, Kate F.	December 31, 1879.
Leet, Cynthia	July 17, 1880.
Lindley, Ida B.	July 17, 1880.
Little, Sadie	January 1, 1881.
Little, Hattie M.	March 29, 1880.
Loomis, Mary	January 1, 1881.
Lumbard, Emma J.	December 31, 1879.
Lynch, Nellie	March 29, 1880.
Maccord, Louise	January 1, 1881.
Mahoney, Margaret J.	March 29, 1880.
Maloney, Mary K.	July 14, 1881.
Maloney, Nellie A.	July 14, 1881.
Manning, Lulu A.	July 14, 1881.
Martin, Emelie L.	July 14, 1881.
Maw, Louisa E.	July 17, 1881.
McComas, Mollie G.	July 14, 1881.
McCorkell, Lizzie	July 14, 1881.
McDaniel, Ella	July 17, 1881.
McDonald, May	July 14, 1881.
McFarlane, Laura	March 29, 1880.
McGreevy, E. J.	July 10, 1880.
McGuire, Blanche A.	July 14, 1881.
McGuire, Mary A.	July 14, 1881.
McLaren, Mary E.	March 29, 1880.
McLaughlin, Mollie	July 14, 1881.
McNab, Jennie	January 1, 1881.
McNevin, Maggie A.	July 10, 1881.
McNicoll, Annie	December 31, 1879.
McNicoll, Belle	December 31, 1879.
Moose, Nellie	July 10, 1880.
Morgan, Olive A.	July 14, 1881.
Morgerstern, Fedrica	July 14, 1881.
Morris, Josephine	January 1, 1881.
Morris, Josephine	July 14, 1881.
Morrow, Sarah	July 14, 1881.
Morse, Cora	September 22, 1881.
Moynahan, Lizzie J.	July 14, 1881.
Murphy, Annie	March 29, 1880.

THIRD GRADE CERTIFICATES—Continued.

NAMES.	Expires.
Murphy, Ella F.	March 29, 1880.
Muir, Mary M.	July 17, 1881.
Nelson, Adelia	January 1, 1881.
Nicholl, Louise	March 18, 1880.
North, Mrs. E. M.	July 10, 1881.
O'Brien, Lucy C.	December 31, 1879.
O'Connell, Annie	March 29, 1880.
O'Donnell, Rebecca J.	January 1, 1881.
O'Donnell, Sarah F.	January 16, 1881.
O'Leary, Lily J.	March 29, 1880.
Otis, Ara	January 1, 1881.
Onsley, Clara	January 1, 1881.
Paddon, H. M.	July 17, 1880.
Parker, Emily	July 17, 1880.
Patton, Libbie H.	December 31, 1879.
Peckerman, Bertha	July 17, 1880.
Quick, Annie	January 1, 1881.
Ramsdell, Violante S.	March 29, 1880.
Raney, Louise G.	July 14, 1881.
Reed, Julia A.	July 17, 1880.
Regan, Josie J.	January 1, 1881.
Risdon, Lizzie E.	March 29, 1880.
Rock, Annie	July 17, 1880.
Ross, Jessie F.	March 29, 1880.
Rutherford, Mary H.	March 29, 1880.
Schade, M. Bertha	December 31, 1879.
Shaner, Lizzie	January 1, 1881.
Shaw, Ida E.	July 14, 1881.
Shear, Lily A.	July 17, 1880.
Simmons, Mary B.	January 1, 1881.
Singley, Jennie M.	March 18, 1880.
Silverthorn, Julia H.	July 14, 1881.
Smiley, Helen M.	July 17, 1880.
Smith, Mary A.	July 14, 1881.
Spaulding, Harriet A.	July 14, 1881.
Somerset, Clara J.	December 31, 1879.
Steele, Hattie B.	July 14, 1881.
Still, Mary	March 18, 1880.
Stone, Agnes	March 18, 1880.
Stone, Mary G.	March 29, 1881.
Strauss, Rachel M.	July 14, 1881.
Street, Ella L.	July 14, 1881.
Stowell, Silvia A.	July 14, 1881.
Talmdage, Ettie	July 14, 1881.
Temple, Nora	October 10, 1880.
Tenbrook, Alice	March 29, 1880.
Tobin, Isabella	March 29, 1880.
Travers, Katie J.	December 31, 1879.
Twomey, Agnes F.	July 14, 1881.
Wall, Lillie B.	March 29, 1880.
Ward, Felida P.	January 1, 1881.
Wardwell, Clara C.	July 17, 1880.
Weir, Minnie E.	July 17, 1880.
Wells, Alice M.	March 29, 1881.
Wessinger, Nellie	December 31, 1879.
Whitcomb, Carrie G.	March 29, 1880.
White, Alice J.	March 29, 1880.
White, Mattie H.	July 14, 1881.
Wickman, Emma	July 14, 1881.
Williams, Jennie	July 14, 1881.
Williamson, Emily L.	July 17, 1881.
Winters, Annie	January 1, 1881.

STATE SCHOOL OFFICIALS.

SUPERINTENDENT OF PUBLIC INSTRUCTION.

EZRA S. CARR.....Sacramento

DEPUTY SUPERINTENDENT OF PUBLIC INSTRUCTION.

JEANNE C. CARR.....Sacramento.

STATE BOARD OF EDUCATION.

WILLIAM IRWIN.....Governor, Sacramento,
President of the Board.

E. S. CARR.....Superintendent Public Instruction, Sacramento,
Secretary.

CHAS. H. ALLEN.....Principal State Normal School, San José.

A. L. MANN.....Superintendent of Schools of the City of San Francisco, San Francisco.

E. W. DAVIS.....Superintendent of Schools of Sonoma County, Santa Rosa.

L. J. CHIPMAN.....Superintendent of Schools of Santa Clara County, San José.

F. L. LANDES.....Superintendent of Schools of Sacramento County, Sacramento.

S. G. S. DUNBAR.....Superintendent of Schools of San Joaquin County, Stockton.

J. C. GILSON.....Superintendent of Schools of Alameda County, Oakland.

STATE BOARD OF EXAMINATION.

EZRA S. CARR.....Superintendent Public Instruction, Sacramento,
President of the Board.

MARY J. WATSON.....Sacramento.

KIRKE W. BRIER.....Sacramento.

MARY E. MICHENER.....Sacramento.

AMBROSE H. RANDALL.....Stockton.

LIST OF COUNTY SUPERINTENDENTS.

COUNTIES.	NAMES.	POST-OFFICES.
Alameda	J. C. Gilson	Oakland.
Alpine	Mrs. Anna L. Spencer	Silver Mountain.
Amador	Adam Edsinger	Amador City.
Butte	Jesse Wood	Oroville.
Calaveras	Charles R. Beal	San Andreas.
Colusa	Samuel Houchins	Colusa.
Contra Costa	E. L. Wemple	Antioch.
Del Norte	John McVay	Smith's River.
El Dorado	John P. Munson	Placerville.
Fresno	R. H. Bramlet	Fresno.
Humboldt	J. B. Casterlin	Hydesville.
Inyo	J. W. Symmes	Independence.
Kern	E. E. Calhoun	Bakersfield.
Lake	S. O. Morford	Lakeport.
Lassen	Z. N. Spalding	Susanville.
Los Angeles	W. P. McDonald	Los Angeles.
Marin	S. M. Augustine	San Rafael.
Mariposa	Richard Kane	Mariposa.
Mendocino	John C. Raddock	Ukiah City.
Merced	L. D. Stockton	Merced.
Modoc	E. P. Grubbs	Adin.
Mono	William T. Elliott	Bridgeport.
Monterey	R. C. McCroskey	Salinas City.
Napa	H. C. Gesford	Napa City.
Nevada	George E. Robinson	Nevada City.
Placer	O. F. Seavey	Auburn.
Plumas	F. G. Hail	Crescent Mills.
Sacramento	F. L. Landes	Sacramento.
San Benito	A. Martin	Hollister.
San Bernardino	James A. Rousseau	San Bernardino.
San Diego	E. T. Blackmer	San Diego.
San Francisco	A. L. Mann	San Francisco.
San Joaquin	S. G. S. Dunbar	Stockton.
San Luis Obispo	F. E. Darke	Cambria.
San Mateo	G. P. Hartley	Redwood City.
Santa Barbara	G. E. Thurmond	Carpenteria.
Santa Clara	L. J. Chipman	San José.
Santa Cruz	W. H. Hobbs	Santa Cruz.
Shasta	Mrs. D. M. Coleman	Shasta.
Sierra	J. S. Wixson	Sierra City.
Siskiyou	Henry A. Morse	Yreka.
Solano	J. K. Bateman	Suisun.
Sonoma	E. W. Davis	Santa Rosa.
Stanislaus	W. H. J. Robinson	Modesto.
Sutter	O. E. Graves	Yuba City.
Tehama	E. S. Campbell	Red Bluff.
Trinity	Mary N. Wadleigh	Weaverville.
Tulare	W. P. Kirkland	Visalia.
Tuolumne	I. J. Potter	Sonora.
Ventura	D. D. DeNure	San Buenaventura.
Yolo	H. B. Pendegast	Woodland.
Yuba	Thomas H. Steele	Marysville.

LIST OF COUNTY SUPERINTENDENTS ELECTED SEPTEMBER 3, 1879.

COUNTIES.	NAMES.	POST-OFFICES.
Alameda	Jewett C. Gilson*	Oakland.
Alpine	P. W. Parker	Monitor.
Amador	L. Miller	Volcano.
Butte	Jesse Wood*	Oroville.
Calaveras	T. G. Peachy	San Andreas.
Colusa	Samuel Houchins**	Colusa.
Contra Costa	A. A. Bailey	Antioch.
Del Norte	John Miller	Crescent City.
El Dorado	Charles E. Markham	Placerville.
Fresno	R. H. Bramlet*	Fresno City.
Humboldt	J. B. Casterlin*	Hydesville.
Inyo	J. W. Symmes*	Independence.
Kern	F. S. Wallace	Bakersfield.
Lake	Mack Mathews	Lower Lake.
Lassen	W. R. Schooler	Bieber.
Los Angeles	J. W. Hinton	Los Angeles.
Marin	S. M. Augustine*	San Rafael.
Mariposa	W. D. Egenhoff	Mariposa.
Mendocino	James R. Thomas	Calpella.
Merced	E. T. Dixon	Merced.
Modoc	E. P. Grubbs*	Alturas.
Mono	Miss A. L. Irish	Bridgeport.
Monterey	S. M. Shearer	Salinas City.
Napa	C. M. Walker	Napa City.
Nevada	John T. Wickes	Nevada City.
Placer	O. F. Seavey*	Auburn.
Plumas	F. G. Hail*	Taylorville.
Sacramento	Charles E. Bishop	Sacramento.
San Benito	J. N. Thompson	Hollister.
San Bernardino	J. A. Rousseau*	San Bernardino.
San Diego	George N. Hitchcock	San Diego.
San Francisco	John Ward Taylor	San Francisco.
San Joaquin	C. M. Keniston	Stockton.
San Luis Obispo	John F. Becket	Arroyo Grande.
San Mateo	G. P. Hartley*	Redwood City.
Santa Barbara	G. E. Thurmond*	Santa Barbara.
Santa Clara	L. J. Chipman*	San José.
Santa Cruz	W. H. Hobbs**	Santa Cruz.
Shasta	Mrs. D. M. Coleman*	Shasta.
Sierra	J. S. Wixson*	Downieville.
Siskiyou	H. A. Morse*	Yreka.
Solano	Albert W. Sutphen	Suisun.
Sonoma	C. S. Smyth	Santa Rosa.
Stanislaus	W. H. J. Robinson*	Modesto.
Sutter	O. E. Graves*	Yuba City.
Tehama	Myron Yager	Red Bluff.
Trinity	G. E. Noonan	Weaverville.
Tulare	W. J. Ellis	Visalia.
Tuolumne	John T. Murnan	Sonora.
Ventura	D. D. DeNure*	Hueneme.
Yolo	J. W. Goin	Woodland.
Yuba	Thomas H. Steel**	Marysville.

* Re-elected. **Third term.

EXPENDITURES.

Statement of expenditures in the office of the Superintendent of Public Instruction for the 29th and 30th fiscal years.

Traveling expenses for the 29th fiscal year	\$1,500 00
Traveling expenses for the 30th fiscal year	964 35
Leaving an unexpended balance of	\$535 65
Postage and expressage for the 29th fiscal year	800 00
Postage and expressage for the 30th fiscal year	800 00
Contingent expenses for the 29th fiscal year	100 00
Contingent expenses for the 30th fiscal year	100 00

STATE OF CALIFORNIA, }
County of Sacramento, } ss.

I, Ezra S. Carr, Superintendent of Public Instruction, do solemnly swear that the appropriations made for the office of the Superintendent of Public Instruction for the 29th and 30th fiscal years have been expended, respectively, as per itemized accounts rendered to the State Board of Examination, and now on file in the State Controller's office, in the payment of traveling expenses, postage, expressage, telegraphing, and contingent expenses, and that the above mentioned amounts are the aggregate of such items, and that the same was justly expended as above set out.

EZRA S. CARR.

Subscribed and sworn to before me, this 16th day of October, 1879.

MATT. F. JOHNSON, Notary Public.

APPENDIX.

OUR PUBLIC SCHOOLS.

An Address delivered before the State Teachers' Association, September 23d, 1878, by Honorable William Irwin, Governor of California.

TEACHERS OF THE STATE—LADIES AND GENTLEMEN: It was not without reluctance that I consented to address you on this occasion. Not, however, because I did not feel an interest in the cause in which you are engaged. The reluctance arose, rather, from a consciousness of inability to prepare an address suitable to the occasion.

On further reflection it occurred to me that, though I am not engaged in teaching, and consequently cannot reasonably be expected to be as well informed touching the condition, character, and wants of the public schools as you whom I address are, it might not be wholly inappropriate for me to address you.

The educational department has become one of the most important branches of the State Government. I ought, perhaps, to say, rather, that it has become the most important.

It has two aspects, and from a consideration of either its overshadowing importance will appear.

First—The cost of the public schools.

The framers of our State Constitution appreciated the importance of public education; and to promote and secure such education they incorporated a clause in the Constitution imposing it as a duty on the Legislature "to provide for a system of common schools by which a school shall be kept up and supported in each district at least three months in every year." By another clause it is made the duty of the Legislature "to encourage by all suitable means the promotion of intellectual, scientific, moral, and agricultural improvement."

Thus is our common school system imbedded in the very foundation, and mortised into the frame-work, of our State Government.

It is recognized as the correct rule in the construction of the Constitution of a State, to hold that the Legislature may legislate on any subject, or pass any legislative act whatever, unless prohibited by the Constitution of the State or the Constitution of the United States. In other words, it is held that a State Constitution does not contain a grant of powers to the Legislature—that it is not necessary for the Constitution to say, "the Legislature may do this," and "the Legislature may do that," to vest the Legislature with power to do those things. It has the right, by virtue of being the repository of the legislative power of the State, to perform all legislative acts whatever, except where restrained, as above stated, by constitutional restrictions.

The Legislature, therefore, would have possessed ample power for the establishment and maintenance of common schools, if the Constitution had not contained a single word on the subject. The

framers of the Constitution, however, were not satisfied to leave the Legislature simply with power to establish and maintain a system of common schools. They deemed the matter to be one of too much importance to be committed to the discretion of the Legislature. They did not deem it wise to leave it to the Legislature to say whether there should be a system of common schools or not. They provided that the Legislature *must* establish and maintain such system of schools. And as the framers of the Constitution were not willing to leave the question, as to whether there should be common schools, to the wisdom of the Legislature, neither were they willing to trust the Legislature to say what disposition should be made of the proceeds of such lands as might be granted by the United States to the State for the support of common schools. They provided specifically that the moneys which should be received from the sale of such lands, and from certain other specified sources, "should be and remain a perpetual fund," while "the interest of such fund, together with the rent of all unsold lands and such other means as the Legislature might provide, should be inviolably appropriated to the support of common schools throughout the State."

I have referred to these constitutional provisions to show the estimate which the framers of the Constitution placed on the importance to the State of a system of common schools, and the care they took to secure the establishment of such system, and to guard the funds for its support, which might come under the control of the Legislature; they left absolutely nothing to the uncertainty of legislative discretion which could be made certain by constitutional provision.

Having thus digressed to show the relation of our common school system to the very frame-work of our State Government, I return to the subject of the cost of the system as now maintained. And I do not suppose that I need apologize for inviting the attention of a convention of teachers to this aspect of the common school question.

The question of its cost—of its cost in dollars and cents—may, in the estimation of some persons, be a low and groveling view to take of so necessary and valuable an institution as that of the common schools. If, however, there be such, I am satisfied they have not well considered how vital is the question of cost—of cost in the low, vulgar aspect of dollars and cents—in connection with every institution of civilized society. No matter how useful or valuable an institution may be, how necessary to the welfare of individuals, of the community, or of the State, there is a limit to the cost at which it may be maintained. And this results necessarily from the very conditions of human society.

In the matter of earnings and expenditures—of production and consumption—the same law applies to communities and States as to individuals. It would be a work of supererogation to frame arguments to prove, or to invoke examples to illustrate, that an individual's expenditures must, in the long run, be limited by his earnings, his consumption by his production. And as the capacity of an individual to earn or to produce has limits beyond which he cannot go, it is always in order for him, when an expenditure is proposed, to inquire if he can afford it. That is, if what he earns, or can earn, will permit the expenditure; if what he produces, or can produce, will allow the consumption.

A community or State is limited in its expenditures by precisely

the same law. If its aggregate expenditures exceed its aggregate earnings, if it consume more than it produces, it must suffer a financial collapse; in other words, it must fall into debt and drift into bankruptcy.

And in the long run, it will be found that the same law will be applied to communities and States, in the matter of contracting debts, that is applied to individuals. Their power to contract debt will be limited by their power, actual or supposed, to pay. And their power to pay must depend on, and be measured by, their power to earn—their power to produce.

Hence communities and States are limited in the amount of their expenditures by conditions as rigid and inexorable as those which limit individuals. Hence, also, with communities and States, as with individuals, a prime consideration, whenever a project is proposed, must be, what will it cost? The question of the cost is as vital as the character of the enterprise—perhaps even more vital. It matters little how beneficent an institution may be, how elevating and refining its influence on the public character, how well it may be adapted to repress and discourage vice and to promote virtue and public spirit, if the cost of its maintenance be beyond our resources, we must abandon it, however much we may regret the hard necessity which compels us to such a course. Communities cannot, any more than individuals, indulge in luxuries, comforts, or even necessities, in excess of their capacity to pay.

I trust you have not begun to infer, from the tenor and scope of the remarks I have made, that I think our common schools are costing too much—that they are costing more than we can afford to pay. I have not drawn this conclusion myself, nor do I wish you to draw it from anything I have said, or may yet say, on this occasion. My purpose has been, and will be, to emphasize the fact—the vastly important and essentially vital fact, as I regard it—that cost is an important factor—in fact one of the most important factors—in connection with every problem and institution of civilized society. It is important in this connection that it be understood—that the teachers and the patrons of the public schools understand—that there is a limit beyond which we cannot go in our expenditures for an object even so necessary and useful as the public schools. And we, perhaps, are now approaching that limit of expenditure, if we have not already reached it.

You will please understand me: I do not express the opinion that, viewed from an educational standpoint, the common schools are now receiving all the support financially which it is desirable they should have; I will say, however, that, viewed from the economical standpoint, they are receiving about, if not quite, all the financial support the community is able to give.

You will excuse me if I now present some statistics which express and illustrate the cost, in dollars and cents, of our common schools. I have already adverted to the provision in our State Constitution which requires that all moneys received from lands, granted by the general government to the State for school purposes, shall constitute a perpetual fund, while the interest, accruing from such fund, shall be expended annually in the support of the schools.

This fund, as you are aware, has been invested in State and county bonds. The amount of bonds in the fund is nearly \$2,000,000; or,

to be exact, it is \$1,971,800. The annual interest on these bonds is \$127,370.

The State in disposing of her school lands, has given to the purchaser the option of paying twenty per centum of the value of the land at the time of purchase, and of paying interest on the remaining eighty per centum at the rate of ten per centum per annum, till he shall become able to pay up such remaining eighty per centum.

The interest paid during the past year by purchasers, on the balances due the State, amounted to \$51,414. This, added to the interest received from the bonds in the perpetual school fund, gives a sum of \$178,784. This, at this time, is the annual yield of the grants of land by Congress to the State for the support of common schools. Of course, a great deal of land granted to the State is yet unsold; a great deal embraced in 16th and 36th sections, and situated in deserts, or in the deep gorges and on the inaccessible summits of mountains, will always remain unsold. Still there ought to be, and I doubt not is, a very large quantity of school land yet unsold which will ultimately be purchased for agricultural and other purposes. I hazard nothing in expressing the opinion that the annual receipts from the land grants to the State for the support of common schools will, in the future, be greatly in excess of what they are at present. But conceding this, it must always remain a cause of profound regret, not merely to the friends of common school education, but to all taxpayers in the State, that a wiser forecast did not prevail at the adoption of the plan for the disposal of our school lands.

The Federal Government, in disposing of the public lands not granted to the States or corporations for specified purposes, has adopted a policy which looks primarily to the early and rapid settlement of the country rather than to replenishing the public treasury from the sale of lands. This policy has no doubt proved a wise one. The early settlement of the public domain by an intelligent, enterprising, and thrifty population, in farms of moderate size, which has been the result of the policy, has been the source of a general wealth and prosperity to the whole country, which have made good to the public treasury many times over all losses which it may have sustained from the alienation of the public lands to settlers at mere nominal prices. In brief, the policy of the Federal Government—the object aimed at in disposing of the public lands to settlers—has been population; the settlement of the country, not revenue; that is, not revenue directly from the sale of the lands.

Now, on the other hand, the policy of the Federal Government in granting to the States the 16th and 36th sections and other lands for school purposes, has been just the reverse of what it has been in disposing of the other public lands to actual settlers at mere nominal prices. As I have already stated, the object in disposing of lands to actual settlers is to secure population, to encourage and promote the settlement of the country. The object in making these grants to the States is, that the States may derive a fund from their sale which may be used in the support of schools. Thus the policy which governed in making these grants had for its primary object revenue; the settlement of the country being only secondary and incidental. The lands have been granted to the States for this specific object, to wit, that they may derive a revenue from the sale or other disposition of

them; not that they may, by offering these lands as a gift or at mere nominal prices, induce immigration within their borders.

The granting of lands to the States by the United States for the support of schools, forms one branch of what we may regard as a comprehensive system, adopted by the latter for the disposal of her public lands.

The practice of donating public lands to private corporations, which has prevailed to so alarming an extent during the last twenty or thirty years, is a foul excrescence on the United States land system, and ought not to be regarded nor treated as an essential part of it. It originated in an unhealthy condition of the body politic, and ought to be cut from the land system of the country as a gnawing cancer is cut from the human body. With its elimination from the system the United States land policy will consist of two distinct, plainly marked branches, neither complete in itself, but each supplementing the other. And I presume we may be justified in regarding the practice of granting land subsidies to private individuals or corporations as a thing of the past; for I cannot suppose that a practice so vicious in principle and pernicious in its effects will be longer continued; particularly in the face of an almost universally hostile public sentiment.

One branch then of the dual system for the disposal of the public lands of the United States provides that all of such lands, except the 16th and 36th sections of each township, shall be disposed of to actual settlers, in small tracts, either as gifts or at mere nominal prices. This branch of the system looks primarily to the settlement of the country. The other branch of the system sets apart the other two sections of each township for the support of common schools. This branch looks primarily to the raising of revenue from the disposal of public lands.

The original idea seems to have been that whatever should be received from the sale or other disposition of the 16th and 36th sections of a township should be devoted to the support of schools in such township. Thus it was intended doubtless, by those who originated the policy of setting apart two sections in each township for the support of common schools, that the two school sections, as they are familiarly called, which were to be sold or otherwise disposed of, with the sole view of obtaining the largest possible revenue from them, should, equally with the other thirty-four sections which were to be given to actual settlers at a mere nominal price, contribute to the inducements to settle in the township. Viewed in its entirety, then, the United States system for the disposal of the public lands provides substantially for giving away to actual settlers thirty-four sections out of the thirty-six in each township, and sets apart the other two sections as a source of revenue for the support of the common schools of the township.

But in the execution of this latter branch of her policy, the Federal Government has invoked the agency of the States, and has made them her trustee to execute her will. She has charged the States with the duty of disposing of the 16th and 36th sections, and applying the proceeds to the support of the schools. And no State, without the most flagrant disregard of the trust imposed on her, can make any disposition of her school lands not in strict harmony with the purpose and policy of the Federal Government in devoting such lands primarily to the purpose of raising revenue. As for example,

if a State, for the purpose of encouraging immigration, should offer her school lands as a gift, or at mere nominal prices, to such persons as would settle on and cultivate them, there can be no doubt that she would be guilty of a gross violation of her duty in the execution of the trust imposed on her by the general government.

I certainly do not desire to convict my own State of this offense; no more do I desire to charge that those who were responsible for the adoption of the policy which has been pursued with reference to our school lands, were influenced by corrupt or otherwise improper motives. I cannot, however, regard it otherwise than as extremely unfortunate that a wiser statesmanship did not preside at the inception of our State land system, and that a policy with reference to our school lands was not adopted more in accord with the spirit and object of the policy of the Federal Government which had placed them under our control. We have not the data to estimate accurately, perhaps not to estimate even approximately, how much might have been realized out of our school lands for our permanent school fund under a wise and judicious system, honestly and faithfully administered. It, however, could hardly be deemed an extravagant assertion, if we were to assert that the school lands already sold might have been made to yield, without inflicting any injustice on the purchasers or injury to the State, which they have not suffered under the existing system, twice, if not three or even four times as great a revenue as has been derived from them. But with a perpetual school fund, twice or three or four times as great as the existing one, and with a correspondingly enhanced yearly interest therefrom, on a how much broader and securer foundation would our common school system rest? For we must not forget that people are always restless and impatient under the burden of heavy taxation, and that all institutions which depend for their support upon direct taxation, except where their necessity is so clearly manifest as to exclude all differences of opinion, are open to attack, on the ground that their cost is out of proportion to the benefits they confer, and are consequently liable, if not to be overthrown, at least to be greatly impaired in their usefulness by being deprived of the means necessary to their efficiency. It is hardly necessary to remark that no matter how much the revenue arising from the permanent school fund may lack of being sufficient to maintain an efficient system of public schools, the deficiency must be made up by direct taxation.

And it is true, unfortunately, as a matter of fact, that the revenue derived from the fund created by the sale of the school lands goes but a very short way toward supporting our common schools. According to the last biennial report of the Superintendent of Public Instruction, the total cost of the schools—including sites for school houses, new buildings, and school furniture—for the year ending June 30th, 1877, was \$2,749,729; and for the year ending June 30th, 1876, was \$2,858,600.

Of this vast sum all except about \$350,000 was raised by taxation; that is, the amount raised by taxation in the school year 1877, in addition to the sums derived from other sources, was nearly \$2,400,000. Of this aggregate \$1,260,000 was raised by State taxation; the remainder by county, city, and district taxation.

We may be able to form some conception of the vastness of the sums necessary to be raised by taxation for the support of the com-

mon schools by comparing them with the amount required for the General Fund of the State Government.

The State Board of Equalization, a few days since, levied, in pursuance of law, for the General Fund for the current fiscal year, a tax sufficient to produce \$1,320,000. This, you will observe, is only \$60,000 more than was raised last year by State taxation alone for the support of common schools; is \$1,079,000 less than was raised by State, county, city, and district taxation; and is \$1,329,000 less than the whole amount expended in the support of the common schools: that is to say, the amount required for the General Fund of the State Government this year is less than half the amount expended on the public schools of the State last year.

Out of the General Fund is defrayed all the expenses of the executive, the legislative, and judicial branches of the government. In the executive department, these expenses embrace the salaries of all State officers, and of their deputies and clerks, and the incidental expenses of their offices; the cost of maintaining the Insane Asylums and the State Prison; the aid granted to orphan asylums and other institutions of an eleemosynary character; the support of the State Printing Office; the cost of erecting and keeping in repair the public buildings, and fitting up and keeping in order the Capitol grounds; the support of the State Normal School; the cost of the bureau charged with the examination of the engineering problems connected with irrigation, reclamation, and the debris question; and the expenditures for an infinitude of other objects, the enumeration of which would overtax your patience. In the legislative department these expenses embrace the mileage and per diem of members of the Legislature; the pay of the officers, clerks, and other attachés of the Senate and Assembly, whose name is legion; and other multitudinous expenditures incident to a session of the Legislature, which, though not susceptible of being catalogued in advance, are, nevertheless, unavoidable. This year, it is true, the expenses of a legislative session will not be incurred, but in their stead we will have those of the Constitutional Convention, which will probably be quite as great.

In the judicial department, these expenses embrace the salaries of the Judges of the Supreme Court, the compensations of the officers and attachés of the Court, and all the other expenditures incident to holding terms of the Court, and the salaries of the District Judges of the State.

These comparisons serve to illustrate and bring vividly before our mental vision the vastness of our expenditures for public school education. Our annual contributions from all sources for the support of our common school system are more than double the cost of maintaining the whole State Government beside—the executive, legislative, and judicial branches. This fact demonstrates sufficiently the importance of the system in the aspect of its cost.

It is pertinent now to inquire:

Second—What ought to be the character of the education which our common schools shall afford? Merely to state the question indicates to some extent, at least, its importance.

I do not deem it necessary or proper to enter on any defense of the position that a system of common schools ought to be supported by the State. As I have already shown, the doctrine that it is the duty of the State, through the proper department of the government, to

provide for the maintenance of common schools, was recognized by the framers of our State Constitution, and incorporated into the frame-work of the government. It will be time enough to defend this action, and show its wisdom and necessity, when it shall be seriously proposed by a body of citizens, respectable on account of their intelligence and virtue, and formidable on account of their numbers, to overthrow the system of schools which has sprung up in harmony with, if not in consequence of, constitutional provisions.

While I know there is not absolute unanimity on the point that a system of public schools, at which all the children in the State shall have the right to be taught, ought to be maintained at the public expense, I have no question that an overwhelming preponderance of public opinion is in favor of it. I do not apprehend that there is any serious difference of opinion among the citizens of the State, either as to the right or the duty of the State to maintain such a system of schools.

But while there is, as I believe, a substantial agreement among citizens as to the right and duty of the State in the premises, there may be, and probably is, a very considerable divergence of opinion as to what the precise character of the education which shall be imparted in the public schools should be. And the most cursory glance at this question ought to suffice to show that it is one of very great importance; and one, also, on which sincere and earnest and intelligent friends of popular education may very well differ. When we come to ask, what ought to be taught in the public schools—that is, in the schools supported out of the public revenues—we find that the question ramifies in various directions. And it is natural, at least not contrary to what might be reasonably expected, that the answers returned to it should be marked by the peculiar idiosyncracies, mental, moral, or political, of those attempting its solution. But while it will be difficult, and perhaps impossible, to return an answer to the question which will be universally or even generally accepted as ideally correct, we ought to be able to find one which will be generally recognized as embodying a solution of it that will answer all practical purposes.

To determine just what studies the common school course should embrace is one of the difficult questions which practical educators have now to deal with.

I suppose there is a general, if not a universal, assent to the proposition that schools supported by public funds and supervised by officers of the State, must be purely secular in their character. I do not deem it necessary to offer any arguments to demonstrate that if we have a system of schools, in behalf of which the taxing power of the government is exercised, which are supported from the public treasury, that it would not be in harmony with either the Federal or State Constitution, or with what may be termed the common law of the land, to give to the system any special religious character.

But to determine negatively that religious creeds, or the doctrines of the sects ought not to be, and shall not be, taught in the schools, is one thing; and to determine affirmatively what ought to be, and what shall be, taught in them, is quite another, and, I think, a far more difficult thing.

Of course there can be no question that reading, writing, and arithmetic must be taught in the common school, for these branches lie at the very foundation of all education. But scarcely do we get

beyond them before differences of opinion begin to arise as to what the common school course ought to embrace. There are many who stoutly maintain that it is not only useless, but absolutely hurtful, to educate youth, who must support themselves through life by manual labor, beyond a competent knowledge of the branches named. They allege, and no doubt with some truth, or at least appearance of truth, that the education of the intellect indisposes persons to engage in manual labor, particularly in manual labor of the rougher and more laborious kinds. Hence they infer that to give those who must, from the force of circumstances which they cannot control, live by manual labor, an education beyond what will be required by the exigencies of their limited business transactions or by their social condition, is simply to endow them with a power which they cannot make useful, but which will add to their discontent at their own lowly condition. They add, and perhaps truly, too, that in this category a majority of those who are educated in the common schools must fall. The inference is not far to draw, to wit, that the common school course ought to be arranged solely with reference to the future wants and future happiness of this class of pupils.

It may be readily admitted—first, that to educate a person indisposes him to engage in manual labor, especially in manual labor of the rougher and more laborious kinds; second, that to give to a person who will be compelled to support himself by manual labor an education beyond what will be required by the exigencies of his condition, is to endow him with a power which can only make him discontented and unhappy; and third, that the majority of those who attend the common schools will have through life to support themselves by manual labor.

But admitting all these assumptions, and I incline to the opinion that there is a modicum of truth in them all, it does not by any means follow that the course of study in the common schools ought to be arranged solely with reference to the future educational necessities and the future happiness of that portion of the pupils who are destined through life to support themselves by manual labor.

It will not be maintained that the common schools or any of the educational institutions of civilized society have been established or are kept up merely to promote or secure the happiness of those who attend them; especially can this not be maintained if happiness be defined to be the mere absence of discontent, the absence of dissatisfaction with one's condition and circumstances. If happiness consist in the absence of these things, it is doubtful if there be any tendency in civilization to make men happy; if the civilized man be more happy than the savage; if the learned man be more happy than the ignorant.

Education looks rather to the development of the powers of the man than to making him contented and happy; its end is development, not happiness. And it is only through the education of the individual that the progress and development of society can be accomplished. And when society, by means of government, which is only the agent of society, undertakes the education of its members, it must look rather to its own conservation and progress than to their individual happiness. This is the law by which society is governed in all its acts. Society, in its organized form, does what society as a whole requires, does what will promote its own interests, as contra-

distinguished from the interests of the parts or individuals which compose it.

The question then to be considered in determining what the course of studies in the common schools should be, is not what course will secure to this or that class of pupils the greatest degree of contentment and happiness in after life, but what will best conserve the interests of society and promote its progress and development. It requires no argument to demonstrate that these ends will be most surely and effectively subserved by giving to the whole body of our youth the most complete and thorough education that can be procured with the means at our command. True, in pursuing this method, much time and money will be wasted on worthless persons, who would be as well off, or even better off, if educated only in the merest rudiments of knowledge, or left wholly without education. But this is the way in which nature herself works. Not one seed in ten which she drops into the bosom of the earth, and waters with the rains and dews of heaven, ever springs up and grows to maturity and bears ripe fruit. But before they are cast into the soil it is impossible to tell what seeds will, and what ones will not, grow and bear fruit.

So before the experiment shall have been made it will be impossible to say what child in the State is endowed with the germ, in embryo, of a Bacon, or a Newton, or a Watt: of a Luther, a Milton, or a Webster; and what one, alas, has only faculties which cannot be improved by education, or which can only be developed into aptitudes for mischief and crime.

The development of the human faculties, and through such development the progress of society and the subjugation of the powers and forces of nature to human intelligence and the human will, are part and parcel of the programme of Divine Providence. And the course of studies in the common schools, as also in our higher educational institutions, should be arranged with special reference to these objects:

First—The development of the mind of the pupil. This embraces, of course, the unfolding of whatever germs of power nature may have given him. It means the calling into action, the sharpening and strengthening of every faculty and power of the mind. It means even more than this; it means that the unfolded, sharpened, strengthened, matured powers of the intellect shall be brought into subjection to the will of their possessor, and shall move in obedience to its volitions. This is the primary object of education; at least it should be. And any course of study which does not keep this object in the front, which does not, first of all, aim to call out, sharpen, strengthen, and mature the faculties of the pupil and place them absolutely at his command, is essentially defective, if not radically vicious, and ought to receive no favor at the hands of the public.

Second—The acquisition, as far as practicable, of useful knowledge. It is hardly necessary to say that very little knowledge, useful or otherwise, can be acquired while passing through the common school course, or even through the course in our higher institutions. The time is too short for making large accumulations of knowledge. Still the germs or seminal principles, which will unfold into vast fields or even continents of knowledge, may be acquired in the schools. Now, the second object of an education is to imbed, to plant in the mind of the pupil, these germs of knowledge, these seminal principles

from which whole sciences may develop, as the majestic oak is developed from the acorn.

I have already said that the first object of an education is to discipline the mind; that is, to make of it an instrument capable of acquiring and using knowledge.

Now, it is axiomatic that there can be no development of the mental faculties except through the acquisition of knowledge. It is equally true that knowledge of any kind, or in relation to any subject, will develop or tend to develop the mind. It will not be pretended, however, that the study of every subject or branch of science is equally useful as a mental discipline.

Now, knowledge of certain kinds is or may become very useful, while knowledge of other kinds is wholly incapable of being turned to any practical account. It ought not, it would seem, to require any argument to show that if the studies yielding useful knowledge are equal in their capacity to discipline the faculties of the pupils to those which yield knowledge only of an impractical kind, that the former ought to have the preference over the latter in our schools. In other words, in so far as the object of the courses of study in our schools is to impart knowledge to the pupils, they should be arranged with special reference to imparting knowledge of a useful character.

According to Lord Macaulay, Bacon's greatest service to mankind consisted in the fact that he diverted the speculations of philosophers and the investigations of scientific men from mere ideal to practical channels and ends. He taught the learned to appreciate truth, not alone because it was truth, but also because it could be made useful; because it could be made the vehicle of benefits and blessings to mankind. And Macaulay ascribes the wonderful progress made during the last three centuries in national wealth, and in the conveniences, the comforts, and luxuries of civilized society, more to the powerful influence of Bacon, in impressing upon the learned that science would not be degraded by becoming useful, than to any other cause, or all other causes combined.

From now forward, the foremost nations of the world will be those who shall place themselves in the van of industrial progress. The greatest nations will be those who can produce most abundantly and cheaply the things which civilized men need and must have.

If we have an ambition to place ourselves in the front, if we would produce abundantly and cheaply, so that we may exchange advantageously with other nations and countries, we must give to our education a practical character; we must inspire in the children in the common schools, and in the youth in the higher institutions of learning, an ambition to extort from nature secrets which she has never yet given up; to study more thoroughly and comprehend more fully her laws; to subjugate more completely her forces and make them more entirely the docile servants of man, administering to his necessities, his comforts, and luxuries.

Thus will we make our common schools and other institutions of learning not alone a blessing to those who attend them; not alone a blessing to our own country; but a boon to all civilized nations and peoples under the sun.

THE SCIENCE, ART, AND PROFESSION OF TEACHING.

BY JOHN SWETT, OF SAN FRANCISCO.

There is an acknowledged science of law and of medicine: is there a *science* in teaching?

There is an acknowledged profession of law, of medicine, and of theology: is there a *profession* of teaching?

The skillful practice of most professions, and of most mechanical occupations, is termed an art, is there an *art* of teaching?

There seems to be a popular opinion handed down from the past that anybody who has studied a subject can teach it; that anybody who can by any means get a legal certificate is duly qualified to "keep school;" that there is no science of teaching, no art of teaching, no profession of teaching; and that there can be no special preparation for teaching, except the slow school of experience in the school-room.

In fact, there is a large class of self-satisfied "school-keepers," who, untrained in the outset, have gained nothing from experience except conceit in their own empirical methods. Ignorant of mental philosophy, of physiology, of biology, of sociology, they sneer at professional schools, and unhesitatingly pronounce all attempts at formulating the principles of teaching into a science as "theories," "speculations," "trash," and "metaphysical abstractions."

Out of the 300,000 teachers in the United States, not one in ten is a graduate of any normal school; of the remaining nine-tenths, a few have fitted themselves by a thorough self-culture to do the best kind of professional work, but the majority are doing the rude work of unskilled laborers.

When we consider the vast number of opinionated "experienced teachers," of bungling beginners in "school-keeping," of mere hearers of text-book recitations, and the low public estimate of them all shown by annual appointments, frequent dismissals, and annual reëxaminations, we may well ask if there is any science of teaching in our common schools.

It is evident, however, that the opinion is steadily gaining ground in our educational centers, that there is a science of education, and that there ought to be a profession of teaching. The number of State and city normal schools is slowly but steadily increasing. In a few cities only professionally trained teachers are employed, and in many places the preference is given to normal school graduates.

Moreover, teachers' institutes and conventions are diffusing a professional spirit, and the number of those who read educational journals grows larger year by year. The school journals, too, are fairly representing the spirit of progressive educators. The increasing number of State, city, and county associations shows the tendency of teachers to crystallize into semi-professional organizations. And there are evidences of a nebulous perception by some school officers, and by some thinkers among citizens in general, that teachers need

special training for their business as well as doctors, lawyers, ministers, and artisans.

1.—THE SCIENCE OF TEACHING.

"In every department of human affairs, practice long precedes science; systematic inquiry into the modes of action of the powers of nature is the tardy product of a long course of efforts to use those powers for practical ends."—*John Stuart Mill*.

The science of teaching may be defined as a classification of principles, based upon a knowledge of things to be taught, and of the child to be trained. The object of school education is to aid the physical, mental, and moral development of school children by means of appropriate training, and by imparting the knowledge required by existing social conditions. This problem of education is complicated by inexorable limitations of health, strength, and capacities transmitted by hereditary descent; hence the necessity that teachers should have some knowledge, in the outset, of psychology, biology, physiology, and sociology.

Education, like sociology, is a highly complex science, subject to a great variety of forces and conditions. As society advances in civilization, science, and art, school education must be modified in harmony with this advance to meet the needs of each succeeding generation. The unknown quantity, the most variable factor in this problem, is the child to be taught. It is an old saying, that human nature is the same in all eyes; but this proverb, despite the wisdom of our ancestors, is a fallacy.

It has been prettily said that the mind of the pupil is a sheet of blank paper, upon which the teacher stamps life-impressions. It is poetically said that the child is plastic clay in the hands of the sculptor; but the real truth is, the child is a bundle of inherited tendencies; the traits of a hundred generations of ancestors exist latent in its growing brain. Education merely aids development and directs tendencies; it cannot create powers, and often fails to control them.

The children of prehistoric man, born in caves at the close of the great glacial period, two hundred thousand years ago, had but little, except form, in common with the children now born in London, Paris, Berlin, and Boston. No one particular age can prescribe the education for the next succeeding age; no one nation for all other nations; no one race for all other races. Schools are an organic growth of society, and represent the spirit and wants of a people.

The failure to recognize education as a science is one reason why educational progress is so slow. In the words of Mr. Youmans, "our teachers mostly belong to the old dispensation. Their preparation is chiefly literary. If they obtain a little scientific knowledge it is for the purpose of communicating it, and not as a means of tutorial guidance. Their art is a mechanical routine, and hence, very naturally, while admitting the importance of advancing views, they really cannot see what is to be done about it.

"When we say that education is an affair of the laws of our being, involving a wide range of considerations; an affair of the air respired, its moisture, temperature, density, purity, and electrical state; an affair of food, digestion, and nutrition; of the quantity, quality, and speed of the blood sent to the brain; of clothing and exercise, fatigue and repose, health and disease; of variable voli-

tion and automatic nerve-action; of fluctuating feeling, redundancy and exhaustion of nerve-power; an affair of light, color, sound, resistance; of sensuous impressibility, temperament, family history, constitutional predisposition, and unconscious influence; of material surroundings, and a host of agencies which stamp themselves upon the plastic organism and reappear in character; in short, that it involves that complete acquaintance with corporeal conditions which science alone can give—when we hint of these things we seem to be talking in an unknown tongue, or, if intelligible, then very irrelevant and impractical.”

II.—THE ART OF TEACHING.

The art of teaching may be defined as a skillful application of the science of teaching in the school-room; or, in other words, the application of the laws of a natural and rational education, based upon a study of the nature of the child to be trained. The guiding principle in the art of teaching may be condensed into the following statement: It is what the child does for himself and by himself, under wise direction, that educates him. The untrained and unskilled teacher holds that children are educated by what is told to them, or by what they memorize from text-books. To him all children are alike—vessels to be filled to the brim with facts. To him children have but one faculty, that of memorizing words. He does not educate them, that is, draw out, train, and discipline their faculties; he does not awaken their curiosity, and lead them to observe and think for themselves; his process is purely mechanical, as if he considered his school a factory, and the boys and girls as so much raw material to be turned out the desired manufactured article. For him there are no educational authorities. He teaches just as he would if Pestalozzi, Froebel, Spencer, Arnold, Mann, and Russell had never thought, observed, discovered, and written. He teaches just as he was taught, in the “good old way” of our fathers, the stupefying effects of which some of us had the misfortune to experience a quarter of a century ago—a “way” which is still followed in many country schools, in some city schools, and in not a few high schools and colleges. This way is self-perpetuating by blind imitation. It is impervious to criticism, and will die out only when the species of untutored school-keepers shall be regarded as fossils in a past educational formation.

The following are a few of the unscientific and inartistic methods characteristic of too much of our “school-keeping:”

1. A blind adherence to the text-book in use.
2. The *verbatim* recitation of memorized lessons, without reference to ideas.
3. The failure to aid pupils in thinking by suitable explanations.
4. Telling everything in advance and giving pupils no chance to find out anything for themselves.
5. In arithmetic, requiring the logic of problems before thorough training in adding, subtracting, multiplying, and dividing numbers. In wasting time on technical “school-masterisms,” instead of concentrating the attention upon essentials.
6. In grammar, by requiring definitions, parsing, conjugations, and rules of syntax before practice in sentence-making.
7. In geography, by memorizing the answers to a multitude of

map questions, to which the child attaches no correct notions, before laying a foundation of ideas drawn from the personal observation of local surroundings.

8. In history, by memorizing useless particulars before taking leading events.

9. In botany, by taking books before plants.

10. In physics, by taking text-book statements and omitting experiments.

11. In reading, by training children to call words which convey to their minds no correct ideas.

12. In drawing, by drudging upon lines, angles, and geometrical forms, before the delineation of common and interesting objects.

In view of the charlatanism and empiricism to be found both in courses of study and methods of instruction, we may well be tolerant of the opinions of those who assert that there is, as yet, in our common schools neither an art nor a science of teaching.

A State Superintendent who had made, during a long term of office, hundreds of visits to all classes of country schools, declares that he never once saw a teacher conduct a recitation without a text-book in hand; that he seldom saw either teacher or pupils at the blackboard; that he never saw a school globe actually in use; that he never saw a teacher give an object-lesson; that he never heard a lesson in morals or manners; that he saw but one school cabinet; that he never saw a reading class trained to stand erect and hold a book properly; that he never heard a teacher give a lesson in local geography, and he never found a school where the children had evidently had one; that classes, when asked to point north, uniformly pointed upward to the zenith; that he never heard a spelling lesson dictated in which the teacher did not mispronounce one or more words, and that he never found a school where the pupils had been taught to write a letter either of business or friendship.

An examiner in one of the ten largest cities in the United States says that he found many classes of primary children who had been to school for three years and had never made a figure or a letter upon the blackboard; that lessons in "oral instruction" were written on the blackboard by teachers, copied into blank-books, and memorized by pupils; that the school globe was seldom used; that most of the teaching consisted in hearing *verbatim* text-book lessons; that pronunciation was slovenly; that pupils were trained neither to think nor to speak; that half the recitations were conducted in writing; that pupils were kept up at high pressure by frequent competitive written examinations; and that the anxiety of teachers seemed to be, not to develop the faculties, but to cram the memory to pass the "annual examination."

Such bungling teaching is a natural outcome of the popular notion that any person who has been "educated" can become a teacher without special training in the science and art of teaching. There is no class of teachers so hopelessly unprogressive as those who have grown wrong-headed from untrained experience, and who are ignorant of their own ignorance of skilled methods. It is this class of pedagogues that Carlisle has so graphically made immortal: "My teachers were hide-bound pedants, without knowledge of man's nature, or of boys', or of aught save lexicons and quarterly account books. Innumerable dead vocables they crammed into us, and

called it fostering the growth of the mind. How can an inanimate, mechanical verb-grinder foster the growth of anything—much more of mind, which grows not like a vegetable (by having its roots littered with etymological compost), but like a spirit, by mysterious contact with spirit—thought kindling itself at the fire of living thought? How shall he give kindling in whose own inward man there is no live coal, but is burnt out to a dead grammatical cinder? My professors knew syntax enough, and of the human soul this much: that it had a faculty called memory, and could be acted on through the muscular integument by appliance of birch rods."

III.—THE PROFESSION OF TEACHING.

Except in colleges and universities there is, as yet, in our country, no profession of teaching. There are, it is true, many men and women who make teaching their life-work, but they have little or no legal recognition as professional teachers.

The peripatetic pedagogue is found only in the remotest rural districts or on the borders of civilization; but still, by law and by custom all teachers are regarded as itinerant.

In many States "the law" requires all teachers to be reëxamined annually for a "certificate to teach a common school one year;" and if the State law fails to require it, local, town, or city or country regulations demand it.

The "law" requires school officers to elect teachers annually; and when the "law" does not require it, custom, precedent, and reverence for antiquity exact it.

There is not one single State in the Union that requires by "law," as a prerequisite for obtaining a certificate, that the applicant shall have pursued a professional course of study relating to the philosophy of teaching. The law merely requires an examination in the elementary studies to be taught; it represents the conservative spirit of the people, crystallized into the idea that anybody who passes this examination can keep school. There is only one city in the United States that, by a local regulation of the Board of Supervisors, not by statute law, requires, as a prerequisite for obtaining a city certificate, either a Normal School diploma or certified successful experience in the school-room. Boston has taken the first step towards securing professionally trained teachers.

Before school teaching becomes recognized by the public as even a skilled occupation, to say nothing of a profession, there must be some system of permanent professional certificates and diplomas, authorized by State law, such as are medical diplomas or licenses to "practice law." There is only one State in our country that, by statute, recognizes teaching as a *quasi*-profession. The School Law of California authorizes the State Board of Examination to issue certificates, without examination, to the holders of diplomas from any Normal School in the United States; to issue certificates, without examination, to the holders of life certificates from other States; to issue life diplomas to duly examined teachers after ten years' experience in teaching. In no other State is the possession of a diploma from a professional school any legal evidence whatever of "fitness to teach a common school one year."

In some other States the legal provisions for obtaining State certificates, by examination in reading, writing, arithmetic, etc., without

any special reference to preparatory training in the art of teaching, and the establishment of local, city, county, and town boards of examiners, constitute a sort of protozoic indication of a nebulous tendency to a higher order of professional development.

In the good old times, when winter schools afforded the young college student a temporary employment in vacation, a written certificate of "good moral character and fitness to teach a common school one year," made out after a verbal examination of five minutes, was all the temporary "school-keeper" needed.

But now both law and custom lag behind the needs of our schools and the actual status of teachers.

Have we not reached a stage of educational progress when the State Normal School diplomas of one State ought to be *prima facie* evidence of legal fitness to teach in other States? Is there any valid reason why the diploma of the New York Normal College, or of the Boston Normal School, should not legally entitle the holder to teach in any city in the United States? Must the narrowness of local prejudice, or the doctrine of educational State rights, stand forever a Chinese wall in the way of professionally trained teachers? Is it essential to the safety of our common school system that all teachers who migrate westward must halt at every State line, or city boundary, or district border, and submit to an "examination," in order to prove that they are not educational "tramps?"

Is it to be wondered at that so many Trustees, committee-men, and petty school officers regard teachers with contempt, when the "law" requires them to submit to so many humiliating conditions?

The election of teachers for the term of only one year is another legal barrier in the path of the professional teacher. It is impossible to dignify as a profession an occupation in which those who follow it are sure of their places for only one year, and are subject to removal at the caprice of ever-changing school officers. Even under our wretched civil service system, in which places are parceled out as spoils by the victor, the partisan appointee holds his place for a term of four years. Is there less need of an educational service reform? The most western city in the Union is the only one in our country in which the tenure of position is during good behavior.

Among the minor causes tending to prevent a recognition of teaching as a profession are:

1. The short terms of office for School Trustees and Boards of Education.
2. The multiplicity of State school laws, and the countless number of local rules and regulations.
3. The lack of any national educational center.
4. The low estimate by many people of common school teachers.
5. The low rates of salaries and the total lack of any discrimination in wages between professionally trained teachers and raw recruits.

IV.—THE NEXT STEP.

Before our public schools can be brought fully in harmony with the wants of existing social conditions, the people must be educated to demand State or city laws containing a provision in substance like the following:

No persons shall be eligible to positions as public school teachers unless they hold State, City, or County Normal School diplomas, or

unless, before entering upon an examination in order to secure teachers' certificates, they shall present satisfactory evidence that they have pursued, in some other educational institutions, an equivalent course in the science and art of teaching. All existing teachers' certificates shall entitle the holders to be recognized as professional teachers.

Our existing methods of issuing temporary certificates on mere technical examinations in certain school studies, are only the rude contrivances of our ancestors against ignoramuses or of persons lacking an elementary book-knowledge. They are no test whatever of the professional skill or training of applicants, and it is next to impossible to conduct public examinations attended by large numbers of candidates so as to test their professional knowledge of the principles and methods of teaching. There is only one safe course, and that is to require all teachers, as a prerequisite, to pursue a professional course of study in a professional school.

Not all graduates of medical schools make good doctors, and not all graduates of normal schools make good teachers; but in both cases there is far greater probability of success than in the case of both untrained and untried persons.

In the days of our ancestors, when men, women, and children were struggling to subdue the wilderness, drive out the savages, and earn a living, the rude school house, the itinerant school-keeper and the three months' winter school were all that the times required. But because, in the days of trails and horseback riding, our grandfathers went to mill with corn in one end of a meal-bag and a stone in the other, shall we continue to do so in this age of steam?

The primitive district school no longer furnishes an education sufficient for the needs of the people under the changed conditions of society.

In agriculture the sickle has been superseded by the reaper; the scythe by the mower; the flail by the thresher, and hand labor by machine labor. The age of machinery requires not only the skilled hand but the trained mind. In order to secure the right kind of instruction in the common school we must have teachers trained to their work, secure in their positions and paid fair salaries.

In the United States there are about one hundred State, city, and county normal schools, which graduate about 2,000 teachers annually. There are probably admitted into the army of 300,000 teachers at least 20,000 untrained "beginners" every year. These have to learn how to teach at the children's expense, by experimenting upon them, as the barber's apprentice learns to shave upon the chins of his master's less favored customers.

These facts do not indicate that the people have yet been educated up to the belief of Horace Mann, "that normal schools are a new instrumentality in the advancement of the race." But from the nature of our school systems, our progress must be slower in some respects than it would be under a centralized government. We have a multiplicity of State laws, hundreds of local city laws, and City Boards of Education, thousands of Town Committees, and tens of thousands of District School Trustees. Uniform advancement is impossible. The school district is the unit of political organization, and every district is, in a measure, an independent republic, or rather, a local democracy. The schools are improved only by the slow pressure of public opinion; they cannot rise higher than the

average intelligence of the communities of which they are the outgrowth; but, as they are under the direct control of the people, they are vitalized by the American spirit of freedom, and their development is certain in the long run.

Meanwhile, in many parts of our country, we must expect that the statement will hold true that was made two centuries ago by Roger Ascham, "school-master" to Queen Elizabeth: "And it is pity that commonly more care is had, yea, and that among very wise men, to find out rather a cunning man for their horse, than a cunning man for their children. For to the one they will gladly give a stipend of two hundred crowns by the year, and loth to offer to the other two hundred shillings. God that sitteth in heaven laugheth their choice to scorn, and rewardeth their liberality as it should. For he suffereth them to have tame and well ordered horses, but wild and unfortunate children; and therefore, in the end, they find more pleasure in their horse than comfort in their children."

It will doubtless be urged that college graduates, in consequence of their higher education, ought to be excepted from any professional training as a prerequisite for teaching. Let the college establish a professorship of the science and art of education, and provide a special course for their students who desire to become teachers. Let the high schools establish post-graduate normal classes and training classes to meet the demands for trained primary teachers. Colleges, normal schools, and high school normal classes, all combined, could supply the nation with trained teachers.

At a late meeting of the American Institute of Instruction, Larkin Dunton, Principal of the Boston Normal School, said: "A school of pedagogics, ranking with or above schools of law, medicine, or theology, thoroughly endowed, and therefore independent, and having its reputation bound up with that of a great university would, it seems to me, be the crowning glory of our educational system. From it would go out an influence that, in two generations, would revolutionize the instruction in our academies, high schools, and colleges; that would introduce a new era in school supervision throughout the country, and that would raise the business of teaching to the rank of a noble profession. I would provide for some systematic professional instruction for teachers in all our colleges; and besides, I would establish one or more superior normal schools in connection with the universities."

At a meeting of English educators, held in London, July 6th, 1872, under the auspices of the College of Preceptors, the following resolution was passed:

Resolved, That the institution of professional chairs of the science and art of education in each of our universities would be a most valuable measure, and ought to be pressed upon the attention of the government and the Parliament.

In the discussion which preceded the passage of the resolution, the following facts and opinions were elicited: "Graduates fresh from universities were apt to think they knew all about the art of teaching; to overlook the fact that boys required a different kind of training from that which was suitable for men of mature minds; to think they have nothing to do but lecture as they have been lectured to; to look with contempt upon books on education, because the authors were merely school-masters, thinking that, as university men, well taught and so on, they had ability to form plans of their own. Often

these graduates had been found utterly unable to teach the most elementary subjects satisfactorily. It was extremely difficult to impress upon the minds, even of the wranglers, the simple principles of the art of teaching. They were not prepared to take pupils whose intellects were so little formed, and whose brains had still to grow, and prepare them to receive that amount of knowledge that it was expected they should have when they left school."

In a paper on this subject, A. D. Mayo says:

So far the average American college has obstinately refused to recognize the existence of such a science as pedagogy. Its young men are sent forth to occupy the commanding positions of high, grammar, and academical school-masters, often with no valuable experience even in the lower grades of instruction, and not even a course of college lectures or intelligent reference to the literature of their great profession. Coming into these difficult positions, for which their scholastic attainments are often amply sufficient, they find themselves in contact with subordinate lady-assistants who have received the best drill accessible in normal and training schools, backed by a considerable experience in all grades of the common school-room. It is inevitable that two forces so charged with positive and negative elements should strike fire. In hundreds of school-rooms the success of the instruction is marred by this open or smothered conflict; the learned young man, contemptuous of the academical inferiority of his girl-assistant; the bright girl-graduate of the normal school, electric with tact and on edge with the new methods, poking fun at the pompous, pedagogic incapacity of her principal. I am convinced, from long observation, that much of the power generated in the best normal and training-schools and institutes is swamped by the obstinate indifference or hostility of the average male college graduate in the master's chair to anything that has not entered his college curriculum. The result is all the worse, that the average college method of instruction is probably the most hopeless style of teaching now on the ground; often a bigoted holding on to the mechanical habit of cramming a boy with the contents of a small library of books, and calling that a "liberal education."

The profession of pedagogy is the latest comer among the liberal professions of this country. The law, theology, and medicine are already so crowded with partially and well-educated candidates, that the people are able to select the wheat from the chaff. No community of any considerable pretension is now compelled to take up with a pettifogger for its lawyer, a quack for its doctor, or an ignorant gospel-ranter for its minister. The objective point of our system of normal education is to stimulate the preparation of teachers by agencies, public and private, popular and collegiate, till the same "glut in the market" enables the school committees to go into the field and choose the best the money supplied by the people will command.

EDUCATION BY WORK.

BY A. W. OLIVER.

Above all other social and political questions, one problem is now taxing the energies of thousands of our deepest thinkers and keenest observers. The kind and the degree of education which our public schools ought to furnish are subjects which are now deeply agitating the popular mind, not only in our own State but in other States, where the common school system has been more thoroughly tested than with us.

The movement which is gaining ground with startling rapidity to cut down the scope of free, popular education, is, by its champions, leveled at certain political and social evils, which are threatening the safety, if not the very life, of our republic. Much of the official corruption that disgraces our State and national legislation is charged against our too liberal free school culture. It is urged that thousands of young men, educated out of the desire and the ability to earn their living by honest labor, are overcrowding the so-called learned professions, flooding the country with unprincipled politicians and lobbyists, and multiplying the army of literary vagrants, the most dangerous of all tramps. That these charges are only too well founded must be evident to the merest tyro in social and political economy. We are suffering as a nation from the *over-production of non-producers*. Society, from the steady influx of the multitudes who expect to make a living without manual labor, has at last become top-heavy. The results which we see on every hand—thousands too lazy and too shiftless to work, seeking to “keep the wolf from the door” by the most crooked practices and in the most trifling pursuits—these results are the logical *growth* of causes which we pay millions of dollars annually to *cultivate*.

That education which *allows* our young men and women to look upon manual labor as anything but emobling is as false in principle as it is pernicious in practice. As long as labor shall remain the chief source of all our temporal blessings—as long as labor shall constitute a chief factor in the scheme of human redemption—as long as God himself shall continue to work—just so long will any educational system that shall fail to inspire our youth with a love of labor continue to be national suicide, and treason against Him who has said of man, “by the sweat of thy brow shalt thou eat bread.” There is a steady increase in the number of able-bodied men who would blush at being seen handling the spade as common laborers, but who are not ashamed to hawk about our streets a few papers of stove polish or perfumed soap. There is a steady increase in the number of our able-bodied young women who have been so *educated* as to regard working as a servant, in a neighbor’s kitchen, a disgrace that society would never forgive. Is it any wonder, when we are steadily educating our boys and girls to helplessness, that the pagan hordes of Asia swarm upon our coasts and enter every avenue of industry? An education which should from infancy cultivate in our

children the strength and the love for work would speedily settle the coolie question, for when they shall no longer be able to obtain employment "the Chinese must go."

It is boldly charged against our liberal, free school culture, that it begets in the children of the poor extravagant habits, and fosters expectations which, in the vast majority of cases, can never be realized. These charges, too, cannot be disproved. The great social unrest that ever and anon heaves the surface of American society into threatening billows finds its chief efficient cause in an education which *unfits* the great mass of our boys and girls for the very vocations which the great mass of men and women *must* still continue to follow in order that any society may exist. The grievances that drive to the sandlots, rather than to the house of God, thousands of our workingmen, are not all imaginary. Deep down in the popular heart lie festering the hidden causes of the labor riots and "strikes" that are becoming more and more frequent and threatening. These demonstrations may for a while be silenced at the point of the bayonet; but a system of education that shall inspire our youth with a love of industry, temperance, frugality, and honesty can alone penetrate to the source of these social disorders, and regulate the relations of capital and labor upon the immutable basis of common sense and justice.

Seven millions of the youth of our nation, marshaled under an army of one hundred and fifty thousand teachers, are receiving daily in our public schools the discipline which the wisdom of the age deems best adapted to develop true manhood and womanhood, and to fit them for their destined vocations in life. That the institutions in which our boys and girls are fitted for the duties of mature life should be miniature representations of the real world for which they are being prepared, is in the nature of a social axiom. This vital fact, shadowed forth by the genius of Pestalozzi, and reduced to a science by the great Froebel, has converted thousands of our deepest thinkers to the belief that "education by work" is the only true system by which our youth can be developed physically, mentally, and morally, in harmony with the laws of their own nature and the imperative demands of society.

"By the sweat of thy brow shalt thou eat bread." "He that will not work, neither shall he eat." "My Father worketh hitherto, and I work." Is it not strange that, in defiance of the express commands of Him who creates human souls and bodies, we should have developed a national system of education which, by its very *methods*, is calculated to beget and foster in our children a distaste for manual labor?

While it must be the conviction of every intelligent, thorough educator of youth that our children should be educated, at least *in the direction* of their future duties and responsibilities, yet, in fact, it is very difficult to conceive of any other methods of culture which would so little *suggest* the future vocations of our boys and girls as our present system of free schools, unless it be some of our private seminaries for educational *venering*.

The error is in the foundation, and underlies the whole grand structure of common school culture. In real life practice *precedes* and is the source of theory; the industrial *art* is mastered before or in *connection with* the *science* of which it is the material expression. In the culture of our youth this natural order is reversed, and we adopt the artificial methods of requiring a mastery of the abstract

sciences in our school-rooms without furnishing their practical application in the arts. The results of such false teaching are just what we would naturally expect. The greater part of what we miscall education consists of mere mental photographs of facts, definitions, words, and mathematical processes. Memory is unduly stimulated at the expense of the higher faculties of reason and fancy. The perceptive and reflective faculties, neglected in this one-sided culture, become weak; and even the expressive faculties, exercised principally in repeating the language of text-book authors, receive little discipline. The fruits of such culture we have long been gathering from every public school in the land. "Do men gather grapes of thorns or figs of thistles?" The natural reaction of this pernicious culture is that our children leave school with a positive dislike for any study that requires deep and practical thinking, because their minds have never been trained to reason clearly and vigorously.

The faculties of the youthful mind when disciplined by natural methods of culture to strength, endurance, and accuracy, will always stimulate their possessor to original investigation into the mysteries with which all nature is teeming. But the significant fact is that the great majority of our graduates, instead of finding themselves girded for a life-long race in the field of thought, experience, on leaving school, a relaxation of mind which is permanent and fatal. By divorcing art from science in our school-rooms; by teaching our children theory without practice, we rob them of the chief stimulus to thought. We are making mental dyspeptics of our boys and girls, by compelling them to swallow facts, dates, definitions, and processes which they can not assimilate, because they have no use for them. As teachers we observe that the clearest and most vigorous minds belong to those who find, in the daily tasks assigned by wise parents, some little use for the knowledge they acquire in the school-room.

Under our present methods it requires the utmost vigilance of even the live teacher to prevent his pupils from falling into text-book ruts and grooves. Instead of a sharply-marked individuality, which must be the result of normal methods of culture, the tendency is to produce a dull uniformity by running our children in the same molds. These molds are the books they memorize. Our great inventors luckily escaped the educational mills, which, under the false name of "culture," are constantly grinding to death the inborn originality of our little ones. If we would develop, and not kill, individuality of character and creative genius, we must furnish our children such objects and such employments as shall excite their curiosity, stimulate inquiry, cultivate fancy, and arouse to continued and progressive action all the latent faculties of the mind.

The parent who should compel his child to swallow food which his stomach loathed, would be denounced as an idiot or a monster. The child who is forced to commit to memory what he neither relishes nor understands, is outraged in his mental constitution, and is dwarfed and weakened by the process. The young of all other animals, guided by their instincts, are allowed to develop in harmony with the laws of their being; why should we shut up the budding faculties of our children to dead text-books while nature, like a wise mother, presents on every side her charming object-lessons? Are our little ones criminals that thus, in the spring-time of life while all nature is bursting into song, beauty, and fragrance, they must be

denied those lessons which would minister delight and instruction to every sense, and be herded by fifties in ill-ventilated rooms where, instead of nature, art in its blankest aspect is presented to their glowing minds?

The best school-room for our six-year-olds would be a pleasant, spacious garden, where should be tastefully arranged such curious and beautiful things in nature and in art as would appeal to their young imaginations, and prompt those questions which are the spontaneous expression of the child-mind when awakened by natural methods. The presiding genius of this child-garden should be a woman of rare culture of mind and morals, with a heart large enough to bestow a mother's love on each boy and girl committed to her care. Such a guide, with assistants trained in her methods and imbued with her spirit, would impart the choicest lessons to head and heart, while supervising the work-plays in this family school. With the fresh air toning every nerve to vigor, with the sunbeams painting roses upon their cheeks, their minds receiving knowledge just as demanded by a natural mental hunger, these young souls would find in such a school the gentleness, firmness, love, and wisdom just fitted to inspire and shape them for their immortal destinies. Lessons from the open book of nature should alternate with lessons in some of the industrial arts, to train the little hands to industry and skill, to develop character by inspiring them thus early with some sense of responsibility, and to gradually introduce them to the real world toward which they are growing. During the winter months the children should be gathered into spacious, attractive, and well ventilated rooms, furnished with tables and chairs adapted to the nature of their employments. By such methods, language, arithmetic, drawing, and vocal music, the principal subjects taught in our primary schools, would be mastered without violence to the child's nature, and in less time than is required by our present artificial processes.

Wherever possible, several acres of land should be secured for the use of the school, and the various branches of agriculture should be practically taught to the older pupils. To determine the character of different soils, by inspection and by chemical tests; to learn the habits of the noxious insects that infest our gardens and orchards; to discover the best methods of dealing with the numerous pests that lie in the path of the husbandman—these vital subjects, while they would lead our youth in the direction of practical, experimental wisdom, would also furnish for them the finest mental culture. The elements of agricultural chemistry, if properly introduced into every public school in this State, would, within a single generation, double and in many sections quadruple our agricultural products. Why is it that our farmers continue to give their money to have their sons taught those sciences that beget a distaste for the noblest and most independent profession on earth? Why are our youth not taught the deep mysteries that lie hidden in the soil, that they may love the free and manly life of their fathers, instead of ekeing out a precarious existence on the outskirts of the "learned professions," crowding the poorly-paid clerkships, and helping to demoralize society by swelling the ranks of the non-producers, and those who get their living by "crooked" ways?

Architecture, with its plans and specifications, would furnish the finest culture in drawing and mathematics, and no inconsiderable discipline in the accurate use of language. Suitable rooms should

be furnished in connection with every large public school, where, under the supervision of a master mechanic, "our boys" could devote a portion of each day in developing muscle and originality, while they gave material expression in models to the creations of their own brains.

The material for a thoroughly appointed printing establishment could be procured for a few hundred dollars. Half an hour a day in such a room, devoted to the manual as well as the mental application of the principles of spelling, punctuation, use of capitals, and grammar in general, would give our children a better knowledge of these branches than they now acquire, and in half the time. The saving in mind-confusing text-books would alone pay fifty per cent. annually upon the cost of the office material. To this department could gradually be added everything essential to a complete book-binding establishment.

Every large public school, founded upon such rational methods, would draw scholars from the country. These must be boarded and lodged. A thoroughly-appointed house-keeping establishment could easily be made self-supporting. How labor would be dignified and elevated if in every great educational institution such a department were presided over by a gentleman or lady who combined the skill of a first-class cook with rare mental and moral culture—one who believed that work is noble and God-like. By inculcating the principles of economy, industry, and system; by teaching "our girls" how to cook a wholesome meal, and set a table with taste, we should render it possible for multitudes of the poor to earn a respectable livelihood, and we should earn the everlasting gratitude of thousands of masculine stomachs now sinking under the vain efforts to digest indigestible food.

The one great principle that should underlie every system of child-culture is that the sciences taught in our schools should be such as can be mastered in their application to some art or vocation; and these should be the ones that will best train the senses, and impart skill to the hand and intelligence to the brain.

Only by bringing our children into the daily intimacy of the public school-room may we hope to prevent humanity from crystallizing into masses of social, political, or religious intolerance, hostile to all real freedom. Disloyalty to the principle of free common school education is therefore treason to republican government. The desire evinced in several of our educational centers to cut down the scope of free school culture admonishes us that the very subjects and methods of our public school must be radically changed, if we would not see them razed to their foundations within a single generation.

The spirit and scope of free, popular education must not be narrowed. So long as our grand system of public schools keeps open the great thoroughfares of social and political preferment, just so long may the poor man, whose children are invited to enter these highways, be relied upon to interpose his manly breast to every foe of our country, from within or from without. As our nation consists principally of the poor, whose chief possessions are their children, our common school system, in its present spirit and scope, constitutes the very bulwark of our government. It is, indeed, its "pillar of cloud by day and its pillar of fire by night." May the traitor-arm stretched forth to pluck a single stone from the temple of popular education wither from its socket!

For "education by work" we earnestly plead, because:

First—Such methods will assist the natural development of the bodies of our children. The unnatural restraint of their active, growing limbs, the want of exercise, the poisoned air, by reducing the vitality of our little ones, render them an easy prey to every disease; and all our graveyards are sprinkled with the little mounds of those who fell victims, not to a "mysterious dispensation of Divine Providence," but to the grossest ignorance of the simplest hygienic principles.

As day by day I have watched little children in the school-room, and have seen the roses fading from their cheeks, the luster from their eyes, and the laughter from their voices; as I have seen the child's instincts, which impel him to be constantly at work upon material objects, yielding to the steady, cruel pressure of artificial restraint; as I have watched the lines of care furrowing the brows of innocent childhood, I have been haunted by the suspicion that we are paying a fearful price for this kind of education. Are we sure that it is God's plan of development to imprison these young bodies, exclude from them the sunlight, and compel them to sit still, and breathe vitiated air, and commit to memory mental processes which they cannot assimilate, for so many hours a day?

Second—By making work a prime factor in education we shall save fifty per cent. of the annual expenses of our public schools by educating our boys and girls towards, or fitting them directly for, their future vocations.

Third—We shall thus foster individuality of character, and develop creative talents, which our present groovy, text-book methods are well adapted to repress and destroy.

Fourth—These methods will furnish the means for determining with accuracy the natural *bent* of our children. Tens of thousands make a wretched failure of life because their talents and energies are wasted in vocations for which they have no natural fitness.

Fifth—Our present methods of education fail to prepare the vast majority of our youth for their destined life-work. Were the average human life equal to that of Methuselah, there might be some excuse for this waste of time. Our young men, who have spent within the school-room nearly the half of an average human life—are they now fitted for their chosen work? Our young women—have the long years of patient study prepared them to fill and honor the stations to which nine-tenths of the sex are called? Marvelous to relate! these young men and women are only being "educated" in our schools; afterwards they will have to receive in special schools *special* instruction for their special vocations in life. Thousands of very poor parents in our State are now straining every point financially to carry their children through our long literary course, under the fond delusion that at its close those children will find ready and remunerative employment. But the demand in the few professions for which they are fitted has ceased to furnish employment for a tenth of our graduates; the rest, after these long years of toil and expense, have either to fit themselves for some special employment, or else go to swell the number of those who are trying to get their living by their "wits." This, in the sharp competition of modern business life, is no easy thing; and, after a vain struggle against the heavy odds of skilled artisans in every vocation, scores of them, with crazed brains and shattered nervous systems, are taken to our lunatic

asylums, or else desperately terminate a life that has become insupportable.

Sixth—We shall thus keep awake and active the mental perceptions of thousands of our boys and girls, which can never be aroused without giving them something to do as well as to think of. Scores of children may be singled out in every large public school, whose dull, sleepy looks suggest, not the sciences in the open books before them, but the lotus of the Nile as their principal food.

Our youth will not develop clear, strong, and original minds, so long as we feed them upon husks instead of food, which they can assimilate. Forcing our children to receive mental food, for which no natural desire has been created, is cruel and wicked. Whenever a pupil is required to commit to memory analysis in arithmetic or grammar, which he does not understand, he is being crammed with this artificial food. For example, when our children are first taught the principles of the greatest common divisor, the least common multiple, and multiplication and division of fractions, the minds of nine out of every ten of them are too immature to assimilate these mental processes so as to gain strength and breadth. In the meantime the great majority of our boys, who never get beyond the grammar departments, are suffered to leave school without having developed the desire or the ability to keep their own business accounts with system and accuracy. Yet a simple plan of single-entry book-keeping, such as will meet the wants of nineteen of every twenty of our graduates through life, can be understood and mastered by the average child of ten years. How many of our young men make shipwreck of life because of loose business habits—because they have never been taught to compare receipts with expenditures, and to look their affairs full in the face.

Seventh—The most serious defects in our present methods is their failure to develop the sterling elements of character, industry, economy, honesty, patience, humility, reverence, unselfishness. These qualities conduce more to the welfare of the individual and of society than grammar, arithmetic, or geography; yet these principles, which form the basis of every grand character, find but scanty room in the average school. Do we not indirectly foster some of the baser traits of character? By divorcing work from study in our school-rooms our children learn to despise the humble toil that supports them. The son who has learned enough to flippantly criticise his father's grammar, but not enough to assist that father in his humble toil, has been too long at school. Is it true that many of our graduate girls would blush less at being detected in a falsehood than in being detected by a fashionable classmate assisting in the laundry an over-worked mother? Yet the moral principles and the productive industries of these humble parents, though they be unable to write their own names, conduce more to the welfare of society than all the expensive, showy, and characterless accomplishments of their children. Caseless activity of the growing limbs is the law of childhood. Obedience to this law is essential to bodily health, vigor, and symmetry. The enforced inactivity of the school-room impairs the digestion, attenuates the muscles, impoverishes the blood, weakens the nerves, and begets in our boys a softness and effeminacy which makes them shun work that will severely tax either mind or body. The sedentary life of the school-room, continued through so many years, forms chronic sedentary habits, and the girl or boy who has

been taught in our schools to sit down five hours a day, for ten years, often indolently sits down the balance of his life, and is supported by some ignorant relative, who happened to escape our sedentary methods. The common practice of requiring pupils to commit to memory what they are unable to comprehend and assimilate, naturally begets and fosters loose habits of mind and morals. The boy who has formed the pernicious habit of receiving mental cargoes, without understanding their nature, will be much more likely to make a man of loose business habits, falling heedlessly into debt, and bringing disrepute upon his friends and ruin upon his family. The girl who has formed the same habit, will be much less likely to be thorough in her housekeeping, and careful to keep the monthly expenses within the monthly income.

Is it not true that, by methods of education which outrage so many physical and mental instincts of our children, we are turning the vast machinery of our public school system to the production of social and political evils, which every wise statesman strives to lessen? If we will remodel our public schools upon an industrial basis, we shall easily crush in their infancy many evil principles, which, if allowed to mature, will, like the crocodile's eggs, develop into hideous monsters.

Eighth—Education by work will remove one of the most prolific sources of moral disease. "An empty brain is the Devil's workshop." The most rigid disciplinarian cannot control the minds of his pupils. It is natural for children to be at work with material objects; it is very unnatural to keep their attention long fixed upon abstract subjects. There are many pupils whose bodies only are in the school-room; their thoughts are roving to and fro, rioting, too often, in debasing fancies.

When I read in the pale faces and wandering eyes of our little boys the certain signs of habits and vices that are sapping their physical constitutions, and poisoning the springs of life, as I see multitudes of mere children prematurely arousing in their sensitive organisms, by means of tobacco and beer, appetites and passions which, in a few years, will drive them shackled and willing slaves to dead-falls and houses of infamy; when I reflect that these boys will, in a few years, marry and become fathers, and that by an inexorable physical law "like begets like," I wonder that so much time is spent in presenting to our youth the bare bones of anatomy and physiology, when hygiene, the very science of life, is so imperfectly understood and observed. When I see our public prints, our streets, and our fences flooded with the advertisements of those who make a specialty of diseases resulting from youthful follies and vices, I am amazed that an intelligent and suffering people have never tried the experiment of turning some of the millions thus paid for trying to patch up diseased humanity, into the establishment of schools that shall so teach moral science and the science of life that children will no longer sin against their own bodies. The importance of this subject cannot be overestimated. The connection between diseased functional action of certain organs and depraved morals is close and strong. The young of our domestic animals, guided by their instincts, never violate the laws of their natures. Multitudes of children are born with instincts so demoralized that nothing but the most thorough physical and moral culture can prevent the formation of habits that shall make them the imbeciles or the monsters of society. Our pres-

ent artificial methods of education, violating as they do every instinct of youthful activity, instead of counteracting these evil tendencies, often aggravate and intensify them. Schools founded upon an industrial basis, and under the supervision of the wisest and the best teachers, will so harmonize the development of body, mind, and morals as to save to society, and to their families, thousands who now drift helplessly and hopelessly to our alms-houses, our asylums, our prisons, and our morgues. By such methods of development enough can be saved, in the production of these four frightful products of modern "educated" society, to employ the best teachers and defray the expenses of every public school in the land. If the race is ever to be redeemed, that redemption must begin with the physical and moral training of our children. If we as parents must, by reason of transgression, lay our own carcasses in the "wilderness of sin," having obtained but a glimpse of our princely inheritance, let us, for the love we bear our little ones, so train them as to bring out fresh and beautiful the Divine image, and thus enable them to go in and possess the land. The whole earth, which is bristling with threats and penalties for the violators of physical and moral laws, becomes the very Garden of Eden to him who has learned to obey. Our "Promised Land" lies neither beyond the Hebrew's Jordan nor the mystic Jordan of Death. Into the hands of him who has learned from childhood to rule his own body and spirit is placed the deed to all this goodly inheritance.

If we would the most rapidly improve the physical condition of our race; if we desire to see society leavened by the principles of industry, honesty, temperance, frugality, purity, and brotherly love; if we would usher in the golden age, when a man's conscience shall be more reliable than a bell-punch; when the Tweeds of our nation shall be known only as the fossils of a corrupt age; if we would see the day when honesty and fitness shall be better qualifications for office than availability and brass; if we would explode the popular delusion, that "corporations have no souls," and teach men that they cannot shirk personal accountability to God by doing their plundering under the protection of great stock-gambling rings; if we would turn the revenue of our houses of prostitution to the building up of happy homes, by teaching our young men to marry, and to live within their incomes, no matter how small, we must establish the school of the future upon an industrial basis; we must teach social and moral science, and the science of life. Real things, rather than books, live and enthusiastic teachers, and not hirelings, must be the chief agents in this great work.

CHILD CULTURE.

 BY EZRA S. CARR, SACRAMENTO.

In the increasing demand of the agricultural classes for an education more adapted to their needs, the farmer has discovered why he has been kept out of his birthright. It was not by bad luck; it was not by laziness; it was for the want of trained intelligence and skill. The brain power of any class must ultimately be the measure of its social and political power. The farmers have been saying this at their meetings for several years; the Grangers have made the educational plank the strongest plank in their platform. We often hear it remarked that any man can be a farmer—that bone and muscle are almost the only requisites for success in that calling. The farmer's daughter turns away from the manly farmer's son, and encourages the *city snob*, against the dictates of her judgment, because she has been left to believe that there is no chance in farm life for refinement, for sociability, or intellectual pleasures.

It is these notions, and unfortunately there is some reason for them, which have made that ogre of the farmers—the middle-man—who, in nine cases out of ten, is a spoiled farmer, whose wife was discontented with hard work and social privations, and had found life, as Gail Hamilton expresses it, “one uninterrupted flat.”

The farmers of the United States are maintaining a far greater number of these persons than the legitimate demands of trade require; and the same is true of the mechanics, who, while complaining of their burdens in no measured terms, seem misled as to their origin in the inequality of education.

Scott Russell tells us, that between the capitalist who has no skill, and the laborer who has no education, the middle-man, who has a little of both, is a kind of necessity. But put a hundred or a thousand men together who have enjoyed equality of education, setting aside all inequalities of birth and fortune, and these proportions must change. For the lack of this equality in education, while agriculture and mechanics fill twice as many mouths as commerce, twenty times as many as manufactures, forty times as many as railroads, and fifty times as many as mining, the least of these, by their superiority in this respect, exercises three times the power with the government and in public affairs of all kinds. First of all men, the farmers, and next to them, the mechanics, are interested in the matter of public education, and in having the kind best adapted to their wants. I shall, therefore, make no apology for taking *child culture* for my text. Our progress during the last six years is due to our increased facilities of travel and transportation. So many are now busy with plans for increasing immigration, that it may be useful to have one voice directing the public mind to the solution of a more important question, viz., how to grow a crop of sound-bodied, right-minded, clean-hearted children, who will “take to work” as naturally and kindly as a duck takes to water.

I hold that the end of the crop is the eater; the end of labor, the

betterment of the laborer; and that human improvement is as legitimate a subject for discussion in agricultural societies as that of colts or chickens. We have hitherto left this subject pretty much to the doctors—doctors of the body and of the soul—whose occupation will be gone when man truly reflects the Divine image. And, although we need the help of these doctors still in the work of human improvement, and although we are immensely indebted to them for what has already been accomplished, I think it is better to pay them for the ounce of prevention than for the pound of cure. Nature herself protests when a lean, dwarfed apology for a man calls himself master of the noble brute creatures, which have become more than half human in their intelligence and beauty through careful selections, breeding, and nurture. An organization like this, having for its object the improvement of the farmer as well as the farm, will not love a horse less because it loves a child more. The interests of agriculture are bound up with those of education, especially in that modern form of it which is denominated “technical.” The farmer’s children are “the best working stock on the farm;” and the value of skill, intelligence, and good character applied there is more and more highly appreciated. This is the lowest, most material view of the subject, but it is one that the political economist will not overlook. Do our schools, do any of them, meet the great demands of agriculture and mechanical industry? Hundreds of the best and most progressive teachers say they do not; thousands and tens of thousands of anxious parents say they do not.

In a recent meeting of a State Agricultural Society in the East it was said: “What we want is not mere culture, but culture applied, culture realized, culture put at work, and demonstrating day by day its uses.” The masses of our people have little time to pursue branches of study which have not some direct bearing upon their callings or avocations. Aside from the elements, which all should receive, the importance of special knowledge, bearing upon special work, is paramount. Our system should be changed, so that from the highest classes in the country schools to the university, by unbroken gradations of the most liberal training in the acquisition of knowledge and skill, men and women should be fitted worthily to perform their appointed service in the industrial state.

For the last thirty years I have been showing that our education, both in the colleges and public schools, has been *illiberal* in the strongest sense, and have been seeking to modify it in such a way, that, wherever the course of study is broken off, something of direct practical value should be gained.

It is fifteen years since the Massachusetts State Board of Agriculture asked the Legislature for the passage of an Act authorizing, as the first step in furnishing an agricultural education to the people:

First—“The engrafting upon her common school education the study of elementary geology, animal and vegetable physiology, and botany; to be taught in the usual form, by manuals, with suitable illustrations, simple and inexpensive; so prepared that it will not altogether depend upon the knowledge of the instructor to make them of use to the learner. With a slight change in their studies, our children would learn something which would every day become more deeply implanted in their minds by what they see going on around them. These studies,” they said, “cannot be commenced too

early, for they are the germs of all future development, the vitality of which is never lost; they must be planted early if it is hoped to reach a full harvest."

Second—They asked for an agricultural school with a farm attached to it, where the practice of agriculture in its several departments, and the best methods of farm management, could be practically learned. The committee, among whom I find the names of Marshal P. Wilder and George B. Loring, said: "If a person, who had the ability to perform whatever he undertook, should offer to the people of this commonwealth a secret, by which in twenty years the productive value of the lands throughout the whole State would be doubled, what would that secret be worth? The diffusion of general agricultural education would accomplish that object; nay, go far beyond it, in less time than has been named, and at an expense that would be trifling in proportion to the benefits that would flow from it."

Other States have taken similar action. The farmers of the West have recommended a revision of the school course with this object in view.

In Illinois, an able defender of industrial education said: "We take the child out of God's natural industrial university and send him to school, where, at best, only a fraction of his entire manhood can be properly developed; and after all we do not fit pupils for actual life, even in those elemental studies, after forty weeks' school per annum, as well as they were fitted in ten weeks half a century ago. One prime cause of this is that the book-makers and publishers have assumed about as absolute control of our public schools as the politicians have of our post-offices. Rich publishing houses have offered as high as \$70,000 for the introduction of a single textbook into a State. And yet not one of those books teaches us the things which it is our chief interest to know, and our protracted school drill leaves little time for anything else."

"I wish," said Professor Turner, "to make room for some of the subjects which underlie the industrial arts, botany, entomology, and zoology for instance. The State of Illinois spends say \$12,000,000 a year on her public schools, and loses from \$10,000,000 to \$20,000,000 from obnoxious insects. Now, I would have every kind of these insects, about a hundred in all, with pins in their backs, put up in a show-case in every public school in the State; and I would have every child know them as well as he knows his father's cows and horses. Instead of having one or two lone men looking after them, I would turn millions of intelligent young eyes upon them, and thus prepare for their extermination. I would have this, whether the child knew there was such a word as 'en-to-mol-o-gy' or not. The hard-working American people want to know something about our continent, our life-work, our bodies, and bones, and souls; our duties and destinies in the great republic in which we live. I look upon the agricultural classes to lift us out of this monkeydom of precedent into the true freedom of American citizenship. All that is needed is that every man should quietly set about improving his own school, in his own district, as fast and as fully as he can."

I shall make no apology for quoting these educational authorities. I warn all those classes who do not believe in industrial education, that Broderick's words are fast coming to be true, that "workingmen

will rule this nation," and surely the quality of our sovereigns is of vital importance to all classes.

The State Superintendent of Connecticut says: "Every child's education is deficient who has not learned to work at some useful form of industry. Labor aids in disciplining the intellect and energizing the character. Especially does farm work task and test the mind, leading a boy to plan and contrive to adapt means to ends. Of all our improved gymnastics none is better than manual labor, cheerfully and intelligently performed, especially farm work. The ambition for easier lives, and more genteel employments, and the silly but common notion that manual labor is menial, that the tools of the trades and the farms are badges of servility, have greatly lessened apprenticeships, and ought to be refuted in our common schools.

"Our youth should there be taught the dignity and necessity of labor, and its vital relations to all human excellence and progress, the evils of indolence, the absurdity of the present fashion for city life, and the wide-spread aversion to manual labor. A practical knowledge of some industrial pursuit is an important element in intellectual culture."

I fully indorse these sentiments: "Whatever you would have appear in a nation's life must be put into its schools," is a Prussian motto, and we put the same idea into Section 1702 of our Code, which makes it "the duty of teachers to instruct pupils to avoid idleness, and to train them to a comprehension of the rights, duties, and dignity of American citizenship." But Prussia enforces her principles in the most universal system of "real" or technical schools, which turn out able young farmers, carpenters, blacksmiths, house-keepers, and nurses, while with us all ends in an admonition to "avoid idleness."

The State must go farther than this—it must fit its children for their places in the industrial ranks. The nation has two technical schools, one for training of navy, the other of army officers. Each State has one for the training of teachers, and most have real training schools or colleges of agriculture and the mechanic arts. If these are what they should be, they will do for those pursuits what West Point and Annapolis do for the army and navy, viz., make men who are proud of their business. I wish those who think the baseball club and the boating club furnish a more dignified employment for the muscles of our young men than manual labor, could have been with me at the annual examination of one of the nation's training schools, where high-born and low-born, without distinction of nationality or religion, learn—what? To scrub a deck, to furl a sail, to use every tool in the carpenter's shop, in the blacksmith's shop; to make and to mend everything that belongs to a ship, to be considerate, gentlemanly, orderly; to command themselves and others, to obey, to love their country's flag, and to die for it without a murmur; to go down with the ship, if need be—all this, while they learn everything that is required in literature and science, for an education of the first class.

And must one be a soldier, or a sailor, to be thus furnished for his country's service, for his own service in the industrial state? Shall a man be trained in all manliness to walk the quarter-deck, worthy of all obedience because he understands what he requires, and has himself performed, not once, but a thousand times, all that he exacts

from subordinates; and may he not have an equal training for the post of foreman in a mechanic's shop, for the management of his own broad acres and the laborers he requires to cultivate them? Do you suppose they would put a man in charge of the Naval Academy, or tolerate a single professor in West Point, who thought practical education in war and navigation would prove "a failure"—was, at best, a doubtful experiment? No; that isn't the way they manage. Those old admirals and army officers are seamen and soldiers through and through, from boots to buttons; they believe in their business. The men who lead in industrial education must believe in it also.

The kind of education wanted to-day is not that which has passed current, and which has proved a dead failure in making a generation of nobler youth, stronger in body, clearer in mind, and firmer in conscience, than the half-schooled frontier gave us a hundred years ago. Don't take this on my authority, but look through the Governor's messages and State Superintendents' reports. Why, only last year the Education Committee of the Massachusetts Legislature said: "The public school system of Massachusetts fails to meet the demands of modern civilization." Why and how? Civilization now demands skilled, intelligent labor. "Occupations which require no skill, but only brute force, will necessarily be vacated by human hands." The substitution of steam culture for hand labor has thrown thousands of English workmen out of employment.

"Society, in the march of improvement, is as certain to do without the unskilled, the unintelligent, and uneducated, as it is to do without wild plants and animals. Nor will the laws be unjust which forbid those who cannot create their food to subsist on the labor of others."

Governor Hartranft, of Pennsylvania, calls attention to the scarcity of skilled labor in that State, and says that although \$10,000,000 is annually expended for education, none of the children who complete their terms in the public schools have any special fitness for trade, and few become artisans. He recommends schools where boys can be instructed in trades, and urges compulsory education. One would think these reasonable views and demands would be met in a reasonable spirit of furtherance from those who are directing the great work of public education, but I regret to say that, with a few exceptions, this is not the case.

Our teachers, as a body, are not ready to carry out educational reforms, they have no active sympathy with industrial pursuits. Naturally enough they prefer to teach what they are most familiar with, and, unfortunately for the interest of the masses, of the nine-tenths whose school education begins and ends in the ungraded public school—the nine-tenths who pay the taxes for the support of schools, the whole course of study is so directed as to give these classes little or no help in their callings in life.

The history of education fully explains why it is not more practical. Colleges and seminaries grew up out of the monasteries, which for a long time treasured all the learning that there was in the world. Learning was a monopoly; first of the priests, then of priests and the nobles, then of these and the Judges, and finally, and not without hard squeezing, the leech or doctor got into this good company, and then came the printed Bible to carry the art of reading wherever religious zeal could take it. There was nothing but literature for education to use; it covered the whole field except mathematics. Columbus invented geography, and Galileo and Copernicus astron-

omy, long after the great European universities were founded. In England, where our college system came from, the aristocratic classes only were benefited by it, and it suited them very well. And when the common school got started, it simply took a few of the first leaves out of the college book. It is not so very long since men learned to read and spell in the Universities of Oxford and Cambridge. It took several centuries of human progress to bring rulers to consent that common folks should learn the alphabet, and again to get permission for women to tamper with the dangerous thing, and when New England and the older States began the work of popular education, this by no means included the definition—which I would gladly see placed over every school-room door: "That man has a liberal education who has been so trained in youth that his body is the ready servant of his will, and does with ease and pleasure all the work that as a mechanism it is capable of, the parts of whose intellect are of equal strength, in smooth working order to forge the anchors, as well as spin the gossamers of the mind; whose mind is stored with the great fundamental truths of nature, and of the laws of her operations; one whose passions are the trained servants of a vigorous will and a tender conscience; who has learned to love beauty, hate vileness, and respect others as himself." (Professor Huxley's lay sermons.)

It has not only taken a long while to bring the alphabet from Oxford into the English laborer's hut; but it has taken a long time to get a spinning jenny, a power loom, and a steam plow created for the further bettering of the laborer's condition; England has quite lately learned, to her cost, that an Oxford education does not answer the demands of the spinning jenny age.

Until about the time of the gold discovery in California, England was domineering over the rest of Europe, through her commercial supremacy and her command of the supplies of raw materials, which enabled her to take the lead in manufactures. These advantages she was likely to retain; but France and Germany, by the most magnificent provisions for technical schools, set themselves to compete with her on her own ground of manufactures, and not only distanced her completely, but almost drove her from the field. The Exposition of 1867 proved that Germany could make better steel, and France better locomotives; "that England was beaten, not on some points, but by some nation on nearly all the points on which she had prided herself." The English Government then sent eighty skilled workmen over to the continent to find out the causes of defeat. The unanimous reply was, "their industrial education has caused it."

Lord Stanley addressed the most careful inquiries to all the English Consols in France, Prussia, Saxony, Switzerland, Belgium, and got the same answer, "industrial education." And lately there comes from England a plan for a national system of industrial instruction for the whole people, beginning in primary schools, and ending in a great "central technical university" for training professors and teachers of institutions of lower rank, devoted to raising the standard of industrial well-being. Instead of believing that money is the root of evil, the Englishman believes it to be the root of industry, and so of all good, and this change in the direction of popular education is due to the lesson the English nation received at Paris and Vienna.

The great natural advantages which we possess will not give us industrial supremacy unless we follow these examples. The International Magazine emphasizes our duty and our opportunity in strong

language: "With an agricultural wealth to which no limit can be assigned, with mineral riches everywhere bursting through the surface, with water-power which no mills can exhaust; not to advance, not to rival the skilled industry of Europe is not a loss merely, it is a crime." The California wheat-grower and wool-grower must compete in the Liverpool market with the wheat and wool of the world. Competition in every branch of industry has become world-wide, and unless the American farmer and manufacturer does his best he is sure to take the lower place in the world's market.

With gold and silver mines that supply all nations, with forests shading our hill-sides, with flocks and vineyards, and great valleys teeming with their abundant harvests, we cannot be rich or great unless we can compete in the enlightened employment of these natural means and forces. The experience of all Europe teaches, "industrial supremacy is the prize of industrial education."

Let us lay the foundation of this supremacy in our public schools, where nineteen-twentieths of our people are educated. Carry it forward by a well-devised system of secondary technical schools, and complete it in a university where prominence is given to different branches of learning, according to the directness and value of these as applied to the occupations and pursuits of our people. The leading pursuits of our people are agriculture, mining, the mechanical and manufacturing arts. It is easy enough to find out what are the studies which bear most directly upon these. We have abundant precedents in the technical schools of France, Switzerland, and Germany, where these schools are counted by thousands, while we have not more than five or six between ocean and ocean.

Perhaps there was never a time when the relations of the government to education need to be discussed so thoroughly, and yet so temperately. That universal intelligence is the only guarantee of universal liberty is one of the fundamental ideas of the American's political faith; but the right and duty of the State to educate has been better stated in monarchical Germany than in republican America. The great Fichte said: "The end of the State is not only to live, but to live nobly." And the clearest of writers upon the philosophy of education, Karl Rosenkrans, said: "The idea that the government has the right to oversee the school lies in the very idea of the State, which is authorized and under obligations to secure the education of citizens, and cannot leave their fashioning to chance. The separation of the school from the State would be the destruction of the school."

With us, it would be the destruction of the State; for here the diversity of the materials which form the State requires the unifying influence of a broad and comprehensive system of public education.

The work of the State in education may be divided into three sections. The first is elementary and general (and should be universal and free), making every child familiar with reading, writing, drawing or picture writing, with elementary arithmetic and natural history, and with the geography and history of his own State and country. Let me amplify a little. Every child should possess earth knowledge, or a general understanding of the planet whereon we live, its physical characters, the distribution and uses of plants and animals upon its surface, a general knowledge, too, of the animal, vegetable, and mineral kingdoms of nature and their relations to

man; skill enough in the use of language to say what he means, with tongue or pen; a sufficient acquaintance with names and qualities of numbers to transact the ordinary business of life; skill enough in the uses of curves, angles, and proportions to embody a design or plan in that way; and in the production of melody and harmony to express in tone language a spiritual state or feeling; he should understand the story of his race and nation in its relation to others; and whatever else he knows, a sufficient knowledge of himself, his body, mind, and spirit should be imparted to enable him to maintain these in a healthful condition—to enable him to keep the divine command “Thou shalt not kill,” and with this, such a sense of social and civil obligation as shall make the command “Thou shalt not steal” audible and imperative in the walks of private life and public duty.

If we break off here we have a “liberal education,” with a foundation broad enough for the universal duty of self-maintenance, and for after-expansion in special directions. In the second stage, separation and specialization should begin, which will necessarily grow and perfect itself with the growth of culture and the more perfect organization of the forces of civilization. We now specialize only in regard to classes of unfortunates, the deaf, dumb, blind, etc.; by and by we can specialize as to uses, and make our country schools more preparatory to agriculture, horticulture, and the like; while our city schools, by vacation classes, half-time schools, and other agencies, at first, and afterwards by special schools, render the same service to the mechanic and manufacturing arts. The certainties of science are swiftly taking the place of the hap-hazard pursuit of those arts, and a great part of secondary instruction should be in the simpler applications of scientific principles. It would be an immense advantage to the youth of this country, if, at the end of this stage of their education, they could be directed by a National Bureau of Industry to the places where their work is most needed.

The establishment of such a Bureau is so practicable, its annual reports would save so much misdirected, hap-hazard industrial effort, that it is a wonder that its establishment has been delayed so long.

The dissemination of the right kind of industrial information among our people would enable every parent to know what trade, pursuit, or calling is in need of recruits, where there is an overplus of particular labor, when and in what lines the prospects for a livelihood are the best. The organization of the national industry, and of the national education, would advance our civilization almost beyond our ability to estimate it.

The work of organizing the national education is now claiming the attention of scholars and patriots. Such an organization, in its higher and lower stages, will be impartial in its bearings upon intellect and industry, impartial as to sex, making a boy's training preparatory to a man's work, and a girl's to a woman's, wife's, mother's work, and both will recognize the intrinsic dignity of self-support.

When this is accomplished, the graduate of the National School of Pedagogy, or Normal School, will have the same relation to the government that the graduate of West Point or of the Naval Academy has, and thus step by step the hitherto unrewarded and despised profession of teaching will be exalted and ennobled.

The technical school in which we are all most directly interested is that which gives us teachers. Without the right kind of teachers,

no reform is possible. The one business which it should be the special concern of the State to maintain in honor, which should be kept free from political or sectarian influences, which should be entered into with zeal and consecrated ability, and never as a makeshift—is education. The educator, whether of the school or the press, stands at the point of power, and holds the highest office in the social economy.

In the third or university stage of education the one-sidedness of a particular or strictly technological training is rounded off by a survey of the relations and value of each specialty to others, without losing sight of a specific, individual purpose. The university is as necessary a part of public instruction as the elementary or technical school, and should be the crown and complement of these. Below this point the States say every child shall be furnished with the means for the rational development of his physical, moral, and intellectual powers; to this, instruction should be added which will enable the child to apply those powers in obtaining a livelihood; while at the gates of the university the State confers a privilege, and says to the youth: You may go up higher and contend for the prizes of thought and activity. The university says: Here you shall find the natural sciences carried up into the science of nature; that the phenomena of society, of industry, of trade, of finance, of politics, are subject to fixed laws. The university is an organic, encyclopedic representation of all the sciences, with their connections and relations. And this is equally true of the arts, architecture, music, painting, the drama—are like the sciences, bound together in a *Universitas Artium*.

While this is the true conception of a university, and should not be lost sight of in laying the foundations of an institution for all time, it is not immediately practical or adapted to the wants of young and growing States. The reason of this is, that the lower stages of public education are yet imperfect and unorganized. To expect to have a great university without a good proportion of high schools, and before we have a single technical school, seems to me preposterous. We may have students crowding into our University to get what other colleges give—liberal literary or scientific education—without getting a step nearer the ideal university, while numbers of the students of older colleges are found among us seeking for second-rate clerkships, in threadbare clothes; but when we get the feeders to our university in running order, we shall find its utmost usefulness realized in the production of educated power instead of educated helplessness.

“We thank you,” said the Iroquois Chief (in the year 1774) to the Government of Virginia, which had offered to educate some of their young men, “we have already had experience of your education, and some whom you have educated in all your sciences come back to us bad runners, ignorant of woodcraft, unable to trap a deer, snare a fish, to build a wigwam; we cannot accept your offer, though we appreciate your good will, but we will take a few of your sons and make men of them.”

Something like this the people have been saying to the universities founded upon the munificence of the State and nation, not because they do not appreciate education, but because they do. They know that it costs more to hang a man, to board and lodge a man at San Quentin, than it would to teach him his duties and

responsibilities of American citizenship and how to get an honest living; that it costs far more to maintain a system of demagoguery than of pedagogy! They know that where five agricultural scientists could obtain employment, five thousand skillful, intelligent farmers are needed to-day in our own State. The friends of the so-called higher education should be willing to see the university filling the present need of technical training in agriculture and the arts, making practical workers as well as thinkers of its students, thus supplying the means of its ideal, perfection.

Do I believe in this good time coming? Most assuredly I do. Froebel's immortal maxim: "Let us live for the children," is sinking deeper and deeper into the heart of the nations.

To reach the greatest number with the precious boon of education—to bring comfort and culture within the reach of all men—is a work in which scholars and statesmen should gladly coöperate.

The time has already come when war is no longer a necessity, and that nation is the most civilized which can most easily dispense with it. The reign of words, too, is almost over; dogmas, religious or political, no longer fetter the nations; thought is free as air. "Literature must take the back seat; while the arts, leading science, make the circuit of the world. Between the standing armies of soldiers, which tell how imperfect still is human government, and the sitting armies of sophists, whose mission it is to perpetuate existing evils, another great army is being drilled—the army of labor—in which we shall find the most practical philosophy, the broadest intelligence, and the most Christian patriotism."

Little more than two hundred years ago Sir William Berkeley, Governor of Virginia, said: "Thank God, there are no free schools nor printing presses here, and I hope there will be none for a hundred years, for learning has brought heresy and sects into the world, and printing has divulged these and other libels." The ghost of Sir William flits in a few remote corners of our land, but the spirit of modern inquiry forbids that it shall be materialized. With conscious pride the farmers and laboring men of America are building a commonwealth whose spirit shall be peace on earth and good-will to man; whose weapon, suffrage; whose conservatism, education; whose objects are freedom, order, and economy within our own boundaries, and an eternal brotherhood with those who are our wider neighbors.

INDUSTRIAL EDUCATION.

Report of the Standing Committee on Industrial Education to the State Teachers' Association
at their Annual Meeting, September 23, 1878.

Your Standing Committee on Industrial Education, appointed at the last annual convention in 1877, submit the following report:

With regard to technical industrial education in the University of California, we express the hope that before long it may be practicable to carry into full effect the organic Act of establishing that institution.

With respect to the subject having an indirect bearing on the proper relation of the public school system to the industrial occupations of society as now constituted, we submit the following:

1. That it is practicable, without interfering with the present school studies, to give them a disciplinary bent which shall aid our youth when they engage in the actual work of earning a living; that while it may not be practicable to educate public school children in general in technical industries, it is desirable to train them for industrial pursuits.

2. That we urge upon our school officers, and upon citizens, the necessity of establishing an evening school in every city, town, and village having a population of over one thousand inhabitants.

Any school which enables workingmen and boys to better their intellectual condition is one kind of an industrial school. The evening schools of San Francisco form one of the best features of her noble school system.

In those schools, the four drawing classes and four commercial classes are strictly technical schools. To these might profitably be added instruction in wood-carving.

3. That in all schools, whether graded or ungraded, city or country, more attention should be given to thoroughness in reading, writing, and spelling the English language.

When the county and city examinations for teachers' certificates show conclusively that many high school and college graduates are unable to read, write, or spell their mother tongue with any reasonable degree of fluency, neatness, or accuracy, this proposition is an axiom requiring no further proof. Over the doors of the primary schools should be posted "No Shams Here."

4. That in all schools below the grade of high schools, teachers should direct their efforts in arithmetic to securing readiness and accuracy in the "four rules," the tables, and common decimal fractions and interest, omitting the rest of the State text-book on arithmetic, if necessary, in order to secure time for a modicum of instruction in natural science.

5. That in all schools teachers should endeavor to train their pupils by means of "language lessons" to express their thoughts correctly in speaking, and to write English with sufficient accuracy and readiness to be able to write, spell, punctuate, and express in grammatical sentences a letter of business or friendship.

In order to do this, if necessary, sacrifice a part of the text-book on grammar.

6. That teachers of all schools, and of country schools in particular, shall give some instruction in the elements of physics, botany, zoology, physiology, and mineralogy; or, in other words, should send out their scholars with a solid stock of common sense knowledge about common things.

7. That all teachers should instruct their pupils in the laws of health, adapting them to the age of the children. Good health is the capital of all boys and girls that have to earn their own living.

8. That teachers should give at least one hour a week to specific instruction in the principles of morality.

Truthfulness, honesty, and character form the foundations of society.

9. That we urge upon women engaged in teaching the desirability of instructing girls in the general principles of domestic economy, and upon men, the importance of impressing upon boys the necessity and nobility of labor, whether manual or mental.

In order to do this it is entirely unnecessary to introduce a cook-stove into the school-room, or transform the school-yard into a barn-yard.

10. That County Superintendents and School Trustees be requested to endeavor to secure the wisest possible expenditure of the school library funds.

The books for the small country libraries should be, not encyclopedias or other expensive books of reference, but books suited to the tastes and needs of school children. Half the money heretofore has been thrown away on trash.

Among other things, every country school ought to have two or three sets of "school readers," in addition to those owned by the scholars. The libraries should also be well stocked with science primers and entertaining story-books.

11. That under our system of local Boards of Education and District School Trustees, it is impossible to reform or improve our schools by means of centralized State agencies. Teachers and reformers must begin at home, instead of wasting their energies in striving after the visionary and impossible. A school system is an organic growth, and any modification must be slow.

12. That we urge upon the Board of Regents of the University of California the educational necessity of establishing a Professorship of the Science of Education, and a special course of studies for those students who desire to become teachers in higher grade schools.

13. That a normal class should be established in connection with each of the larger high schools of the State, for the purpose of supplying the local demand for trained primary teachers. Training classes should be organized as schools of practice in the art of teaching.

Only trained teachers can bring our schools to meet the real need of existing social conditions. The vitality of any school system exists in the men and women who do the teaching.

As a measure of economy in these hard times, we earnestly urge School Trustees to pay money only on condition of first-class work by professionally trained teachers. Trustees have no right to squander the public moneys in the wasteful extravagance of employing educational tramps, even if they are willing to work at a Chinaman's

wages. The State Normal School is good as far as it goes, but we need the added agency of the State University and of high schools in order to send out skilled teachers.

In order to have good schools, we must have good teachers; in order to have good teachers, we must have good Normal Schools for educating professionally trained instructors.

JOHN SWETT,
JAMES DENMAN,
Committee on Industrial Education.

THE INDUSTRIAL EDUCATION OF WOMEN.

Read before the State Teachers' Association, September 23d, 1878, by Mrs. Jeanne C. Carr,
Deputy Superintendent of Public Instruction.

Mrs. Carr said she had not prepared a lecture to read, but had come as a lawyer would, to plead a case, with her brief and her authorities. Much of the reading, from recent works on education and descriptions of special schools, is necessarily omitted in this report.

The educational problem continually presents itself under new aspects, and we are made to realize more and more that it is not a fixed quantity to be weighed and measured, that both in quantity and quality it must change with the changing moral, intellectual, and social condition of the people.

Rip Van Winkle, waking from his long sleep, was not more unrelated to his surroundings than is the mere cipherer or grammarian, the accepted type of the pedagogue of the past generation, to the education of to-day, defined as Spencer, or Huxley, or Tyndall, as Dr. Chalmers or Dr. Channing would define education. Herbert Spencer says: "In what way to treat the body; in what way to treat the mind; in what way to behave as a citizen; in what way to utilize all the sources of happiness which nature supplies; how to use all our faculties to the greatest advantage to ourselves and to others; how to live completely—being the great thing needful to learn, is consequently the great thing which education has to teach." "To prepare us for complete being. This is the function which education has to discharge, and the only rational mode of judging of any educational course is to judge in what degree it discharges such functions."

I will not bring up our educational course for judgment, but leave each of you, fellow-teachers, with this high standard before your minds, to reflect upon the probable result upon the social and industrial condition of California if the 135,000 children who were attending our public schools in the year 1877, were taught there "how to treat the body, how to treat the mind," how to utilize the manifold sources of happiness afforded here; above all, "how to behave as citizens."

I will leave you to decide whether the grave charges so boldly made at a recent meeting of distinguished educators, be true: "Under this system [meaning that under which most of us are at work], intellect is trained to adorn selfish ambitions, while the workshops and farms are surrendered to ignorance and blind routine. Invention lags behind necessity. The lands are worn out; laborers return to cheerless homes, where their wives are weary with unintelligent toil, and thus more and more classes are separated into castes; competition destroys fraternity; anarchy, convulsion, the logic of the commune takes the place of an equal administration of law and justice. The principle of competition, fostered in the school, runs into every avenue of business. We no longer blush to confess that money-mak-

ing is our duty, that patriotism, honor, and honesty are no longer the watchwords of this nation."

But the testimony of our ablest physicians as to the effect of our present one-sided and incomplete process of citizen-making is too important to be overlooked, in an argument for the industrial education of those who must initiate whatever reforms are practical. Dr. Buchanan said, only a few weeks ago, in a most able address before the University convocation at Albany: "There seems to be nothing in existence, on any large scale, in the leading institutions which can properly be called a liberal education. That which probably claims to be such, viewed from the standpoint of anthropology, is not only lame, feeble, and defective in the most essential elements of a liberal education, but positively illiberal in its influence upon the intellect and soul, as well as degenerative in its influence upon the body. Instead of making men and women, the colleges have so often broken them down, that it is made an argument against the education of women, that education is dangerous to health."

Dr. Seguin brings equally grave charges against the public schools, and declares that the alarming increase of near-sightedness has its counterpart in the mental and moral organization, where the balance is not maintained by the co-education of body, mind, and soul.

Nor is the testimony of eminent teachers less searching and conclusive, as you may see by referring to the last report of your Superintendent, where this testimony is brought within the compass of a few pages. We will take it for granted, then, that in many respects the public education of the present generation is not discharging its two functions.

Again, I read: "Our civilization is a series of life-deteriorating processes. The producing classes degenerate in mines and factories, artificial wants do their work upon the consumer; luxury deteriorates the one, and want and misery degenerate the other. It is only through education that these deteriorating processes can be stayed—an education which has for its object the hereditary progressive culture of the race."

Every periodical, every religious and secular newspaper echoes the cry of public corruption. It is conceded that there are "certain dangerous tendencies in American life" which are unopposed and unmodified by our education. I have cut the fresh pages of the last Atlantic Monthly this morning, to find these pointed sentences: "We have a great increase and development of unfavorable and disorganizing forces within our national life, and no corresponding increase of wholesome or vital activities. The morality based upon the religion properly professed, has, to a fatal extent, broken down. Multitudes of men who are religious are not honest or trustworthy. They declare themselves fit for heaven, but they will not tell the truth, or deal justly with their neighbors. The money of widows and orphans placed under their control is not safer than in the hands of highwaymen. There is no article of food, medicine, or traffic which can be profitably adulterated or injuriously manipulated, that is not, in most of the great centers of trade, thus corrupted and sold by prominent members of Christian churches." The same writer also deplores the decay of patriotism and public spirit "among those who have in an average degree the benefits which our system of education now confers, who have been through our schools, edit newspapers, and represent us in Congress." "They are not so much uneducated as

miseducated." "Two things are especially to be noted in our popular school education, it usually leads to no interest in literature or acquaintance with it, nor to any sense of the value of history to modern men—a very serious defect; and its most characteristic and general result is a distaste for manual labor. We have some good schools, of course; but great numbers of teachers and principals of our high schools in country places have for several years explicitly taught their pupils and urged upon parents the sentiment that in this country education should raise all who obtain it above the necessity of drudgery; that there are better ways of making a living than manual labor, and that these higher ways will be open to all those who get an education. All this has resulted in a dainty, effeminate, and false view of the world as a place where only uneducated and inferior people need work hard, or engage in toilsome and unattractive employments."

The example of the classes thus raised above drudgery draws from Dr. Holland, in the last number of *Scribner's Monthly*, the declaration that it is for the lower classes an education in stealing, in the betrayal of trusts, watering of stocks, grain gambling, stock gambling, in the use of power without heart, without conscience, honor, or patriotism.

These, then, are the social results of making individual culture the end of education. The same impulse which sent the early convert to Christianity into wilds and deserts to perfect his spiritual nature, has made high scholarship the goal of youthful ambition with us, an ambition as selfish and anti-social as those which destroyed older civilizations.

"Individual education means selfishness, which, winding its way from the school-room to the cabinet, creeps down thence to the lowest shop, and involves the nation in ruin," while race education, setting the claims of the race above those of the individual, being at the same time functional and hereditary, advances the individual, and being advanced by him. Man, not scholarship, is the aim of race education.

"Race education strives for a strong, healthy, and normal humanity; scholastic education sends its literary firework up into the clouds, unconcerned about the unenlightened masses below." The development of the race and the individual is best secured when the first is treated as the end, the second as the means.

"Race education, or progressive hereditary culture, has a double duty to perform, the correction of physical, moral, and mental morbid tendencies, and developing and strengthening the normal activities of man in the most susceptible and pliable period of infancy and youth."

The adaptation of woman to this work of hereditary progressive culture would seem to need neither comment nor illustration. Not only the nurture of the race in infancy is confided to her, but she is intrusted here in America with a large part of the work of the schools. Europe keeps its army of 500,000 young men for defense, who in time of peace are living in idleness; we have an army of 500,000 young women engaged in the most important of all activities, our defense against the ignorance which Europe has been sending to us for the last fifty years. Of these female teachers, the larger part are promoted, after a year or two of service, into the headship of families, leaving their place in the schools to be filled by others in

turn. Whether we look upon women as mothers or as teachers, we must recognize the importance of their work in any determination of the question of social progress.

These young women have, by a false training and false notions of what education is, been engaged in overtasking and overstimulating their pupils; in devitalizing and, by so much, demoralizing the present generation. They need to be taught that the priority of educational work is: First, organic education, or the training of the organs by the exercise of the functions, or as Froebel put it, education by play; second, to develop the functions by the judicious exercise of the organs, the organs of sight, of hearing, of touch, and then to elevate these functions of seeing, hearing, touching into the rank of capacities for the various activities of life.

It is of far more consequence that our youth should attain the perfection of body which distinguished the Greeks, than that they should be able to read Homer in the original; for no matter how great one's intellectual resources may be, they are unavailing unless the organs be trained to execute the behests of the mind.

And it is of far more consequence that the teacher should be able to lead the child's first experiments in life intelligently, with a full knowledge of its threefold nature, than to be able to express herself in classical or modern tongues, other than the mother tongue; because to teach well is not only to spend, but to husband the vital resources of the next generation. It is not so much to increase the specific knowledge of this or that, as to increase and harmoniously develop the capacity for all knowledge, and especially to develop the capacity of applying knowledge to the improvement of our life.

It would be interesting to trace the ideas now modifying our education, especially in the primary range, back to the grand individualities where these ideas originated; to follow the experiments of Pestalozzi, at Stanz, Berghof, and Yverdon; or De Fellenbergs, at Hofwyl. But I can only call your attention to two or three points. That the great educators have been philanthropists, have made a religion of education; that they have insisted upon education by work; and that they have exalted maternity, and given a new dignity to womanhood.

Early, Pestalozzi wrote much of home education and of the influence of mothers, but later he frankly stated that he had made the mistake of considering these doctrines applicable.

We hear the same doctrine in every meeting of teachers, when industrial education is considered, and they are not more applicable here in America than they were in Switzerland fifty years ago. It is well to emphasize the value of the home factor in education; but the homes of by far the greater part of our population do not furnish the means, the parents have not the requisite knowledge to enable them to coöperate effectively with the schools in a system of race education. We cannot at present organize parental interest and affection into this beneficent service, and are forced to aim directly at the pupils in our public schools, who will soon take the place of parents and patrons.

Dr. Seguin says that when he watched at Vienna the immense efforts made, and the treasures spent by nations, partisans, and sects, to take possession of the child, he was forced into a new train of reflection upon the nature and aims of education. We must aim at the possession of the child. "The restless activity of the child is

the foundation of the indefatigable enterprise of the man." He must be educated in the industries, not so much for the industries as for himself. All through the discussions, which are now frequent upon this subject, there appears a misconception in the minds of both advocates and objectors; the fundamental claim of industrial education is not so much on account of its usefulness as for its educational value. Rousseau and Pestalozzi based their theories upon the fact that work develops virtue, but it was left to Froebel to announce more fully the philosophy and the ultimate possibilities of such development.

All the manifold experiments, the labors, and sacrifices of Froebel sprang from a wide philanthropy, a deep insight into the proximate and remote causes of social disorders, and a tender sympathy for his race. "Education by play" was a term which briefly described the methods he invented for organizing the spontaneous activity of childhood into a system of instructive exercises, adapted to the harmonious development of the threefold nature of the child. "Education by work" was his watch-word for youth also. With these two simple prescriptions, he hoped to overcome the evils of heredity, of environment, and stem the fearful current of physical and moral degeneration. He had little faith in reformatory efforts when habits of indolence had created a soil favorable to the growth of vices; nor did he believe that the mind is like a blank paper, ready for any impression. He found that human progress depends upon the law that hereditary tendencies may be changed by education, and that the results of education may be transmitted by inheritance, another law which warrants the most untiring, the most costly, the most comprehensive educational work, beginning in the home, and completed by the State. Believing that there is nothing more divinely beautiful than a noble man or woman, he argued that the State should be a Providence shaping each child to a noble purpose.

Oh, kindly prophet of the good time coming! Oh, gentle priest of the new religion, which reconciles humanity with itself, man with nature, and earth with heaven! I see thee placing the little child in our midst as the hope of all the coming ages. I see the marriage of order and beauty, of happiness and activity. I see how man may become his own creator, as I watch the growth of the child, the heir of all the ages! And now I have hope for the world, for I also believe that the education of one generation appears as a hereditary tendency in the next, and that man may become his own savior by obedience to the laws of his being.

Froebel showed that this education must commence with the first period of conscious existence, at the hand of the mother. All over Germany Kindergarten associations for the instruction of mothers are now common, and children thus prepared in the home for the wider social life of the Kindergarten, have the same advantage that the Kindergarten pupils possess when they are advanced into the primary school. (The economy of the Kindergarten has been fully demonstrated in St. Louis, where over forty of these schools are maintained from the public treasury. It is found the after progress of scholars is so much more rapid that there is a saving in the cost of instruction in the higher grades.)

Froebel enlisted the sympathies of noble women in behalf of the ignorant and neglected of their sex, and made of these missionaries

of the new education. He realized that the condition of depressed, ignorant mothers, without means, with no power but that of pleasing, was in itself the greatest obstacle to race improvement. "Do men gather grapes of thorns, or figs of thistles?" he said; and on showing that a true home education is impossible until the mothers have been rightly educated, demonstrated the need of special training for the vocation of motherhood. Like Pestalozzi, he believed that training for a vocation was the duty of the State, that every man and woman should have a vocation, and as many avocations as possible.

Whatever is best in the public education of Europe has sprung from seed sown by these great educators who were lovers of the race, and who made education their religion.

The progress of industrial education in Europe has been rapid beyond precedent. The German Minister of Education writes to us: "Our schools aim to prepare the child for self-support, for domestic and public duties, and we have introduced exercises in mechanical and agricultural operations, from their practical value in developing the qualities of self-reliance and independence. From simple exercises with the saw, the file, and the chisel, the hoe and the pruning-knife, our pupils are determined towards certain trades or occupations, and their special aptitudes are developed."

The knife and the needle are as essential in the Swiss schools as the slate and pencil are in ours. Germany has 1,450 special industrial schools and over 50,000 scholars in attendance. Is it not time for us to consider whither we are drifting, if it be true that "types deteriorate by the lack of training of the senses and the hands?" Is the type of "young America," or the "girl of the period," exactly the model type for the next generation? I do not wish to undervalue the spiritual nature of man, or what we call spiritual and moral agencies for improvement of character. But Paul hints at a significant law of evolution, "first the natural, then the spiritual;" and I would that every Sunday School in America included in its work a practical knowledge of the duties of every-day life, using not only the Holy Scriptures, but science primers, as helps to this knowledge.

We need to organize and unite the now divided ranks of teachers into a solid army, aiming directly at social improvement as the end of education.

It was a great step in this direction when we consented to write upon our school houses Plato's motto: "Whoever educates a woman, educates a race."

Whether we regard women as mothers or as teachers, they are equally workers; they have in all times borne a full share of the burdens of the industrialist, in addition to those which belong to them by virtue of their organic constitution.

Is it not a fair question, whether a part of the vast sums provided by the nation, and dedicated by the State to special education, should not be devoted to the special training of woman for her work in the home, in the school, and for the right exercise of her social powers?

Her competency in the home largely determines whether it shall be the abode of comfort or of penury. Her physical constitution still more largely determines the development or the degeneracy of the race. I read from a speech of Emilie Davies, before the National Association for the Improvement of Social Science: "As long as women live only for trifles, men will only live for making money."

Is it not a standing wonder that while the gifts of rich men and

women flow in a continuous stream into institutions already well endowed for the training of men in the various professions, not one is found ready to endow a training school in home culture and the household arts, and that among all the industrial colleges endowed by Congress, only two or three have made this a specialty.

If you reply that this is what female colleges and seminaries are doing, I can bring an overwhelming array of evidence to the contrary from physicians, educators, and political economists. We have no institutions which benefit those who make the loaf, and those who eat it alike, where the application of principles and knowledge of those principles are kept in close alliance. I know of one public school, and only one, the Girls' High School in San Francisco, where the attempt is made to impart any knowledge of domestic science. The public have yet to be educated to understand that these subjects have a rightful place in the schools. We are behind all civilized nations in these respects.

(Mrs. Carr here described the school of Dr. Kohler, at Göthe, the Elise Lemonnier schools at Paris, the South Kensington school of cookery, Miss Corson's and Miss Parloa's schools in New York and Boston.)

Is the conflict between the ideal and the real never to end? Never, until there is a true and lasting coöperation between the home and the school effected by the better education of mothers. The mothers must be taught that any system of education which ignores work is false, partial, and one-sided. By work man is perfect. What we cannot achieve we but partially comprehend. Froebel said: "We learn through doing." It is the divorce of learning and doing for the first twenty years of life which is making the misery of our times, and increasing the numbers of criminals and paupers of industrial imbeciles.

It is doubtful whether woman will ever take her true place as educator of the race until she ceases to be a ward of the State, ceases to share its guardianship with idiots and criminals. Give her a nobler part to play on the stage of public affairs, and she will help to make education a religion, for she is essentially more religious than man. She will ask and obtain for her children an education in literature and for life, for its varied duties and employments. She will teach them that labor is necessary for the moral development of man, that it is his mission, his destiny, his consummation.

Viewed from a moral standpoint, it is an obligation; from a social one, it is a necessity; the right to labor corresponds with the right to live.

Froebel said: "Let us live for the children." It is not possible to live thus, until woman is self-possessed and free; till the reign of brute force has passed from the home and the statute books. Give to the mother the weapon more potent than the sword, which falls soft as the snow-flake, yet is stronger than the torrent, and she will prove that justice, peace, and good-will are not unattainable ideals.

I do not despair of the good time coming, because I see that competition, not coöperation, is now the law of the home, of the school, and of society. I know that before the Reformation the man who would have demanded that laboring men should be taught to read and write would have been a revolutionist of the most dangerous type. Sydney Smith asked, "may women learn the alphabet?" and it was much harder to substitute the alphabet for the rosary in the

schools, a generation since, than it is now to substitute the tool for the text-book. The true principles of coöperation and of co-education are slowly leavening society—co-education of hand and brain, of body, mind, and soul. I seem to see, in the not distant future, the child becoming, from its cradle to maturity, physically, morally, intellectually, and industrially the care of the State, and not less, but more, the chief care of the family. I seem to see Fenelon's words written over the domestic hearth, and the teacher's desk, "I prefer my family to myself, my country to my family, and humanity to my country."

HYGIENE IN THE PUBLIC SCHOOLS.

The following summary is taken from the last report of the United States Commissioner of Education, 1879. If Boards of Education, School Trustees, and teachers would recognize the fact that man is an air-breathing animal, and that the healthful development of the body, including the organs of sense, is necessary for the healthful development of the minds and souls of children, then would the slaughter of the innocents cease in the land and the golden age of childhood be ushered in. If the principles which have been persistently urged upon the public for the last quarter of a century were applied by school officers and teachers in the rational construction of school houses, and the organic training of pupils, it is safe to say that the money value of our expenditures for schools would be increased fifty per cent., and instead of a race of physical, moral, and intellectual dyspeptics, who cannot see the "roots of honor," we should have men and women. I would have written, in golden letters, over every school house door, the divine command, "*Thou shalt not kill.*"

HYGIENE IN THE PUBLIC SCHOOLS.

The report of the State Board of Health of Massachusetts for 1877 (pp. 229-251) contains a paper on the "Sanitation of public schools in Massachusetts," by Dr. D. F. Lincoln, of Boston, "based on returns from nearly all the school buildings in Boston, the total actually in use being 159, with an attendance of 46,418; also from schools not in Boston, estimated to number 400, with 40,000 children, or about one-sixth of the corresponding school population." The results of the inquiries are summarized as follows: "The drainage of country school sites is reported as bad in one-seventh of the cases; in Boston, in a few." Complaints are made of "dampness of walls or floors; stagnant water in neighborhood; house originally set too low for drainage; entire absence of sunlight in a room." "The ventilation is very generally said to be poor." Complaints are made of "misdirection of funds by which exterior ornament is added, to the neglect of essential portions of the ventilating apparatus." "Bad location of ventilators in the room; coldness of floor, with undue heat of upper air; inattention to the state of the atmosphere on the part of teachers, and sudden opening of windows in cold weather." "A cellar or basement is absent in a number of country schools." Complaints concerning closets, both in and out of doors, are almost universal. Offensive odors are usually complained of; a very few aggravated cases are given. The Boston City Board of Health, in 1876, said, concerning this evil: "The odors escaping * * * pervade the school rooms, causing nausea, compelling the teachers to close the doors and windows to exclude the disgusting scent, which even then penetrates the rooms, especially when the atmosphere is warm and muggy and the scholars are most in need of pure air from without." The diseases mentioned as resulting from this are "catarrhs, dyspepsia, debility, diarrhœa, dysentery, and zymotic disease." "The amount of simple ordinary debility due to a slowly acting cause is often very hard to estimate. * * * That such debility may be produced by * * * living in an air containing fecal odors simply is certain; and from this debility up to the production of headaches, with slight fever, or of violent, even rapidly fatal, cases of typhoid, there are all possible gradations. * * * The connection of diphtheria, scarlatina, dysentery, and diarrhœa with foul odors and bad drains is now admitted to be a fact, though not always a traceable one."

In the report of the State Board of Health of Wisconsin for 1876 (pp. 38-43) we find the following on ventilation:

"Systems of schooling do not fall within our province; but the construction of edifices in which the business of training shall be carried on is of paramount importance, upon the evidence before us, when we contemplate the physical wrecks which have resulted from the continual stress on muscle and nerve involved in our efforts to extend the blessing of intellectual culture to the rising generation. * * * Proper ventilation is impossible unless our buildings are so constructed as to permit of the best processes being carried out in their integrity. * * * It is, indeed, too true that in many buildings, private as well as public, upon which large sums have been expended, a difference of from 12° to 15° may be found between the heat of the room at six feet from the floor and that of the floor itself. Not long since a teacher said, when speaking of a very costly structure, that the children taught therein must stand upon their

heads if their feet were to be kept warm and their brains cool during tuition. * * * Reference has been made to the necessity for additional floor room in school buildings. * * * Many persons suppose that if the requisite space in cubic feet is given for each individual, it matters not whether it is supplied in height or in breadth. No error could be more pernicious. The breathing room of the individual must be comparatively near to his own level, and unless it is sufficient to protect him from breathing the impurities emitted from his own and the neighboring lungs and bodies, he cannot fail to be poisoned in a greater or less degree by the noxious effluvia which every animal emits. * * * The most moderate space assumed to be compatible with the maintenance of health is 25 feet of floor space and 300 cubic feet of air space, with the proper ventilation, for each pupil. * * * When that provision has been supplied, the stigma will be removed from our school system that it causes three-fourths of all the cases of lung disease known to prevail among children."

The same article says:

"Our school system, which is oppressive to both sexes, is specially injurious to girls at the age when they are approaching womanhood. * * * It is a fact, within the knowledge of every expert, that our school buildings appear to have been constructed with the express design to superadd physical exhaustion to the other destructive forces that threaten the lives of the future mothers of America."

The report of the same Board for 1877 (pp. 42, 43) gives the results of some analyses made by Professor Daniells, of the State University, of the air in some of the school buildings in Madison. In one, "in 10,000 volumes of air he found carbon dioxide to the extent of 7.7; * * * in the high school room, * * * in 10,000 volumes of air, 8.74 of carbon dioxide; in the same building, room of second grade, 10,000 volumes of air contained 11.9 of carbon dioxide; * * * and the worst result of all, in the Fifth Ward School, in the primary room, at 3 p. m., on the 22d of March, there being 54 pupils present, one-fifth less than the whole number in the grade, 10,000 volumes of air exhibited 25.6 of carbonic dioxide, or five times the maximum quantity which, under natural conditions, may be found in the atmosphere and respired without danger. The ill effects which must have resulted, and which doubtless are continuing to result, to the constitutions of the children from breathing carbonic acid, carbonic oxide, mephitic gases and exhalations, and dead decomposing animal matter, in air largely deficient in oxygen, the life sustaining property, cannot be described in any adequate degree; but the imagination of the discreet reader will not fail to suggest that the largest benefit to be hoped from school training at that age could not offset the terrible evils which such an atmosphere must entail."

The report of the State Board of Health of Louisiana for 1877 (pp. 72, 73) presents the following statement from one of the Sanitary Inspectors of New Orleans:

"I must earnestly direct attention to the fact that in many of the school-rooms the children are horribly overcrowded. To appreciate the extent of this outrageous treatment of little children, consider by contrast a properly constructed building, such as the McDonough School, which allows for each pupil 23.02 feet of superficial space and 345.30 feet cubic space, and some of these marked 'bad,' which allow to each child 6.86 superficial feet and 75.43 cubic feet space, and others which give but 4.77 superficial and 51.79 cubic feet of space, while others finally allow only 3.81 of superficial and 30.48 cubic feet to each person. It is impossible to describe the manner in which these poor children are not only crowded, but packed, the ceilings and the openings inadequate to afford such ventilation and light as are indispensable to health and comfort. * * * When cold or wet necessitates the closing of doors and windows, the atmosphere is quickly converted into such an intolerable stench as to force a compromise with the weather, and these have to be opened partly: when this is done the children are subjected to irregular currents of cold damp air, a most fruitful source of illness. A heated stove in such a room only adds a powerful source of vitiation."

The President of the State Board of Health of Maryland, in his report for 1876 and 1877 (pp. xxv, xxvi), considers the hygienic condition of schools, especially as affecting the eyesight of the pupils. He says:

"That eye diseases are alarmingly on the increase, especially in large cities, is a lamentable fact, which should force itself upon the attention of the sanitary and educational authorities of the State. Many of the eye troubles, especially near-sightedness, unquestionably originate during school life and ever afterwards render the eyes of the sufferers more liable to take on destructive diseases. Defective ventilation, imperfect lighting, badly arranged desks, crowded school-rooms, and over zeal on the part of the teachers in forcing the brain at the expense of other organs, are some of the preventable causes of eye diseases among our school-going population. Near-sightedness, when thus acquired, not only annoys the individual sufferer for the rest of life, but may be transmitted to the next generation by 'hereditary taint,' so that our improved civilization, under educational pressure, will in time ingraft bad eyes upon our whole people. * * * The paramount importance of strong eye-sight, especially to that class of our fellow-citizens who, from the inexorable logic of necessity, must either educate their children in the public schools or permit them to grow up in absolute ignorance, is beyond all question; and hence it behooves the authorities, both State and municipal, not to distribute with the incalculable blessings of education an evil of so serious a nature as defective vision."

Professor J. J. Chisolm is now engaged in making a scientific examination into the sanitary condition of the eye-sight of the pupils in the public schools of Baltimore, and will make a full report for the next biennial publication of the State Board of Health.

Honorable James H. Smart, State Superintendent of Public Instruction for Indiana, devotes several pages of his report for 1876 (pp. 96-102) to the consideration of the subject of school hygiene, remarking emphatically:

"It is utterly impossible to teach a successful school in a poorly warmed and ill ventilated house. Pure air is necessary to the proper application of the mind on the part of the pupils. Listlessness, peevishness, idleness, and mischief as frequently result from impure air as from a bad disposition. Foul air irritates the body and stupefies the mind certainly and quickly. A ventilating apparatus constructed in a country school house would pay for itself in less than a week in the increased efficiency of the school. * * * A great deal of sickness among children may be traced directly to badly warmed and ventilated school houses. I believe, also, that the foundations of permanent diseases which sometimes manifest themselves in after life are not infrequently laid in the same places."

After recommending certain methods of heating, ventilating, and lighting, he says:

"It is my duty to call the attention of school officers to the evils here spoken of: it is their duty to apply the remedy. If they do not, I think it would be the duty of the Legislature to require them by statutory provision to do so."

A committee appointed by the Medico-Legal Society to confer with the school authorities of New York City, "with a view to such legislation as may promote the health of school children," addressed to the President of the Board of Education of that city a letter, from which the following are extracts:

"At the outset of our inquiries, our attention has been arrested by a report of the Committee on By-Laws, etc., of the Board of Education, under date of March 15th, 1876, not yet adopted, and recommending a continuance or at best only slight modifications of conditions which we are convinced are utterly inconsistent with due care for the preservation of the health of the children in the public schools. * * * We first notice the conclusion of your committee in regard to the amount of air space required. * * * 'In fixing the sitting capacity of rooms, the following shall be a minimum allowance of floor surface and air space per pupil: In the three lower grades of primary schools and departments, five square feet and seventy cubic feet; in the three higher grades, six square feet and eighty cubic feet; in the four lower grades of grammar schools, seven square feet and ninety cubic feet; in the four higher grades, nine square feet and one hundred cubic feet.' * * * Such a capacity of school-room space, though confessedly greater than that which now is and hitherto has been allowed thousands of children in the public schools of New York, is not, so far as we have been able to learn, consistent with physiological law or with the opinions upon this subject of those whose scientific judgment is entitled to deference and respect. * * * In regard to the deleterious effects of an excess of carbonic acid alone in the air we breathe, there is no difference of opinion among competent authorities. All agree that when it reaches the proportion of 1 volume per 1,000, it is dangerous to health; if not immediately, none the less certainly in its cumulative effects. It creates a general indisposition of both body and mind, stunts bodily and mental development, and particularly predisposes to scrofula and consumption; and its excess in crowded apartments is usually an index of the presence of other deleterious agents due to the same cause."

"But, besides these, there are still other gases frightfully abundant in the school houses of New York, due to the emanations from latrines and privies. For example: Primary School No. 1, on Ludlow Street, one of the newest and best arranged and appointed, besides being overcrowded and unventilated, is tainted throughout the halls, and at times by way of the fanlights over the doors in the class rooms, with the odors arising from the latrines in the basement, which are emptied only 'once or twice a week.' The seating capacity of this building is given as 1,700; actual register, 1,440; attendance, 1,329; square feet in 12 rooms, 3,264; cubic feet in the several class-rooms, varying from 33 to 41 for each child! * * * That the children in our public schools should be exposed to poisons generated by means of these foul and disgusting latrines, only to economize the water needed to keep well constructed water-closets in order, is simply inhuman and ought to be at once amended."

"The habit of wetting coal in bulk in the cellars, which is sometimes practiced, causes it to emit poisonous gases deleterious to health, and it should be forbidden."

"Lofty ceilings are regarded by some as a principal means of insuring a sufficient measure in cubic feet for each person. Unless ventilation is secured for the upper portion of a room, a lofty ceiling only makes that portion of space above the tops of the windows a receptacle for foul air, which accumulates and remains to vitiate the stratum below."

"In fixing the 'sitting capacity,' it should be borne in mind that the smaller the allowance the greater the necessity for the constant admission and change of air. * * * If the cubic space be small, the means for change of air must be large in the inverse ratio. Thus, with a space of 100 cubic feet, in order to maintain the air at a healthy standard it must be changed thirty times an hour, which is not practicable without exposing the inmates of the room to dangerous currents. * * * Every individual actually poisons fifteen cubic feet of air every

hour. To prevent this, thirty cubic feet, at the least, should be provided hourly, which proportion, for five hours' daily school session, requires 150 cubic feet as the smallest space compatible with efficient ventilation without dangerous exposure to draughts."

The same committee, in a subsequent report, dwells upon the injustice of enforcing the compulsory law while the school buildings are in their present condition:

"School houses where young children are herded and forced to sit for hours in a vitiated atmosphere, in constrained positions, do not come up to the standard. It would be cruelty to animals, not to speak of tender little ones, to add to this torture by increase of numbers without increased accommodation. The idea of compulsory attendance under these circumstances is preposterous, and at variance with all wise and beneficent law and the common rights of humanity."

At a meeting of the New York Medico-Legal Society, January 3d, 1877, where the subject of school hygiene was under discussion, Dr. Agnew said:

"There is a school in one of the most densely populated sections of the City of New York, in the Tenth Ward, where there are on an average about 1,600 children in the primary department, where rooms are so dark that the blackboard exercises could not be distinguished by the eye, and the gallery classes so crowded that there is scarcely room to move. * * * It would be accounted cruelty to animals to keep them under such unsanitary conditions; how much more is it cruelty to children to keep them there for any length of time."

At another meeting of this Society, February 7th, 1877, Dr. O'Sullivan stated:

"It is but a day or so since I entered one of the new school houses of this city [New York]. * * * I entered the primary class-room on the ground floor, and found there sixty-nine little ones with their teacher. There was a small window facing a side wall not more than two feet distant. * * * Through this small window they received all the light they had, and it was admitted so as to strike their books immediately over the right shoulder. When the door was opened it led immediately into the playground, and the water-closet was in close proximity to it, so that the effluvia could not help but enter with all its freshness into the school room. * * * This was all the ventilation and light provided. I went into the upper rooms of the primary department, and there I found the teachers in one of the middle rooms, and the children seated as close as they could be packed, and I was informed by the Principal that the gloom was so great on a dark day that the little ones could not see the figures on the blackboard. * * * Yet this is one of the recently erected school edifices, 'erected at great expense,' because of the 'modern improvements,' by the great City of New York. * * * I went up into the top or highest floor, the male department, * * * and there I found, with but one exception, that the benches were placed in a position where the light entered in a manner not according to the laws of hygiene—and there was a defect in the sight of the children. And to add to the insalubrious state of affairs, the water-closets used by the teachers were placed in close proximity to the class-room and communicated with it by an open window! And I have been informed * * * that there is a new school house on the west side * * * in which there is the same arrangement throughout."

The report of the Board of Health of the City of Boston for 1875 (pp. 43-51 and 76, 79, and 80) contains the results of the inspection of 111 schools in 10 school houses of that city, "representing, so far as possible, every variety of distinguishing quality:"

"The time chosen in each instance was the last hour of the morning or of the afternoon session, when the room had been occupied at least an hour, and when the air would probably be found at its worst. A specimen of the air was obtained from the middle of the room, the jar being filled at the level with the scholars' heads. At the same time the temperature of the room was taken at the floor level and at the level of the pupils' heads. Finally the condition of the window sashes and of the ventilating registers, whether open or shut, was noted, and a note was also taken of the state of the atmosphere to the sense of smell, with the number of desks in the room and the number of children present. * * * Parkes, the eminent English authority on hygiene, * * * has found that the organic products of respiration begin to be manifest when the carbonic acid in the air of an inhabited room reaches the proportion of .6 per 1,000. * * * Pettenkofer, who is at the head of German sanitarians, makes the limit of purity .7 of carbonic acid in a thousand volumes of air, beyond which an unwholesome degree of vitiation begins."

The smallest amount of carbonic acid found in any of the 111 rooms examined was .57, the greatest 3, and the average of all the rooms was 1.18. Concerning the temperature of the rooms, it is said:

"Some notion of the probable effect upon health of a continued exposure to a superheated atmosphere which is at the same time vitiated by respiration may be obtained by entering almost any of our school-rooms at the latter part of a half-day's session in midwinter. To a sensitive person leaving the outer air and coming at once into such a room, the impression is not easily forgotten. The blast of hot foul air is sickening. The marvel is that children do not more frequently succumb to the inevitably depressing influence of such unwholesome conditions. * * * It may be set down as a safe standard rule that the temperature of school-rooms should range between 65° and 68° Fahrenheit (18.5° and 20° centigrade). It need hardly be stated here that the ordinary temperature of school-rooms is above 68°, and that a point in excess of 70° is very

commonly found. * * * If anything is worse than an excessive degree of artificial heat it is the quick transition to the opposite extreme. It is a frequent thing in school-room experience that the teacher, becoming suddenly aware that the air is too warm for comfort, directs that the window sashes be opened at the top to effect a speedy relief. The consequence is that the inevitable wave of cold outside air sweeps over the uncovered heads of the children, and a fresh accession of cases of bronchitis or of more serious pulmonary affections is the result. An instance of this thing was observed in the inspection of the Chapman School. A room showed at the desk level a temperature of 77° ; three-quarters of an hour later the same room was revisited, when the thermometer indicated 61.7° , a fall of 15.3° ! Between the two visits the teacher had 'aired' the room to some purpose; the air was pure enough, surely, and the coughing and sneezing of the children gave warning that it was cold enough also. If such a sudden change should occur in the outer atmosphere it would be considered a fruitful cause of increased sickness in the community."

* * * * *
 "The universal testimony of the teachers in the course of the investigation was to the effect that they could not rely on the special means provided for the ventilation of their rooms. * * * The system of flues and shafts as at present disposed in school house construction must be supplemented by opened doors and windows."

This report, in conclusion, says:

"It is sometimes said that the matter of school house ventilation is discussed and agitated more than its real importance warrants. * * * The need is not of less but of more agitation, not in the direction of impracticable sanitary speculations, but to promote the realization of feasible, indisputable sanitary principles."

In 1876 the Health Department of Cincinnati ordered a chemical examination to be made of the air in some of the public schools in that city, and the results are embodied in their report for that year. A table is given showing "the number of volumes of carbonic acid in 100,000 volumes of the air of several rooms in each of the twenty-six schools examined." Concerning this table Professor Hough, who made the examination, says: "The foregoing figures indicate most conclusively that in a large majority of cases the ventilation of our school-rooms is injuriously defective. A very large majority of the pupils of our public schools are breathing, for several hours each day, an atmosphere containing more than one-tenth per cent. of carbonic acid. In many cases the degree of vitiation reaches nearly if not quite double that amount." Measurements were made of 265 rooms with a view of ascertaining the amount of air space allowed to each pupil. Professor Hough estimates "from 200 to 300 cubic feet as the smallest allowable air space for each pupil under the present methods of ventilation." Of the 265 rooms measured it was found that "only 29 afford 300 cubic feet or more per pupil; 236 afford less than 300 cubic feet per pupil; 166 afford less than 200 cubic feet per pupil; 22 afford less than 108.5 cubic feet per pupil; and 14 afford less than 100 cubic feet per pupil." Of these 14, several gave less than 90 cubic feet per pupil, and one, only 56.7. "The relation of these magnitudes to the necessary conditions of respiration is fearful." Attention is also called to the imperfect lighting of many of the rooms as calculated to permanently injure the eye-sight of the pupils.

The report of the public schools of the District of Columbia for 1876-7 (pp. 11, 12) contains the results of an inspection by the Health Officer of the District of some of the public school buildings of the City of Washington, concerning which he says:

"The whole story of the condition of the rooms inspected may be epitomized in a very few words, viz.: Altogether insufficient air space; practically no ventilation except by windows; unequal distribution of heat; coal gases from sheet-iron and cast-iron stoves, and generally unsuitable character of the buildings. * * * The average air space to each occupant of the rooms inspected is approximately 170 cubic feet, the air displaced by the bodies, desks, etc., not deducted (twenty of the buildings averaging much below those figures, three being below 100 cubic feet), and had the average of the rooms been taken it would quite likely have been found to be, in some instances, even below that of the lowest building. With no other than the exhalations of the occupants, therefore, to vitiate the air, taking the above average, viz. 170 cubic feet, the whole atmospheric contents of the rooms should be changed every sixteen and a half minutes. * * * In the absence of definite analysis we may estimate approximately that by the window and door method the relative quantity of the deadly poisonous property, carbonic acid gas, constantly present in most of these rooms when occupied, is not less than from eight-hundredths to fifteen-hundredths per cent. * * * An admixture of 1 per cent. in respired air is sufficient to produce death in a short time, and no person can safely remain any long time in an atmosphere having more than seven-hundredths per cent. of this gas."

Dr. Edward R. Cogswell, in his report on the sanitary condition of Cambridge, Massachusetts (p. 353), says of the school houses of that city:

"In nearly all of them, however, improper hygienic conditions are found. In some a prominent defect is in the method of warming; in others the trouble arises from the location and condition of the privies and urinals, while adequate means of ventilation are wanting in nearly all. * * * It too often happens * * * that, owing to the frequent changes in the members of the city government, the experience gained by one Board in the building of school houses is lost to the city when the erection of others becomes necessary. The School Committee,

who have the exclusive charge of the schools, * * * have no authority in the matter of the construction of school houses."

At the meeting of the New York Medico-Legal Society, February 7th, 1877, a paper on "The influence of vitiated air on the eyes" was presented by Dr. Edward G. Loring, of Boston, in which he says:

"I have no doubt in my own mind, and I believe it is universally admitted, that vitiated air has a direct irritating effect on all mucous membranes, and I feel convinced, from my own observation, that the mucous membrane of the eye is peculiarly susceptible to its influence. This is shown by the fact that repeated attacks of inflammation of the mucous membrane of the eye which have occurred in a vitiated atmosphere and which have resisted all curative means, are often cured at once and prevented from recurring when a wholesome supply of air is obtained, all other conditions remaining the same.

"I have, then, no doubt in my own mind that bad air alone, acting as the primal cause, may set in train a series of morbid processes which may, and often do, affect not only the working capacity and integrity of the organ, but which may lead even to its total destruction."

At a meeting of this Society, January 3d, 1877, the results were presented of an examination of the eyes of 1,440 school children in Cincinnati, New York, and Brooklyn:

"In Cincinnati, in the district school, in 209 pupils examined, the rate of near-sightedness was 10 per cent. In the intermediate schools, in 210 pupils, 14 per cent. were near-sighted. In the normal and high schools, in 211 scholars, 16 per cent. were near-sighted. In the introductory class of the New York College 29 per cent. were near-sighted; in the freshman class, 40 per cent.; in the sophomore class, 34.75 per cent.; in the junior class, 53 per cent. In the Polytechnic Institute, in Brooklyn, 10 per cent. of the students in the academic department were found to be near-sighted, and in the collegiate department, of 158 students examined, 28.5 per cent. were near-sighted. There is a striking correspondence between these results and those obtained in Germany, both showing that near-sightedness increases in the advanced grades of the public schools."

ADDENDUM.

List of works on Technical Education :

Technical Education, by Henry Barnard.

Technical Education, by C. B. Stetson.

Education Abroad, by B. G. Northrup.

Systematic Technical Education, by J. Scott Russell.

Modern Art Education, by Joseph Langs.

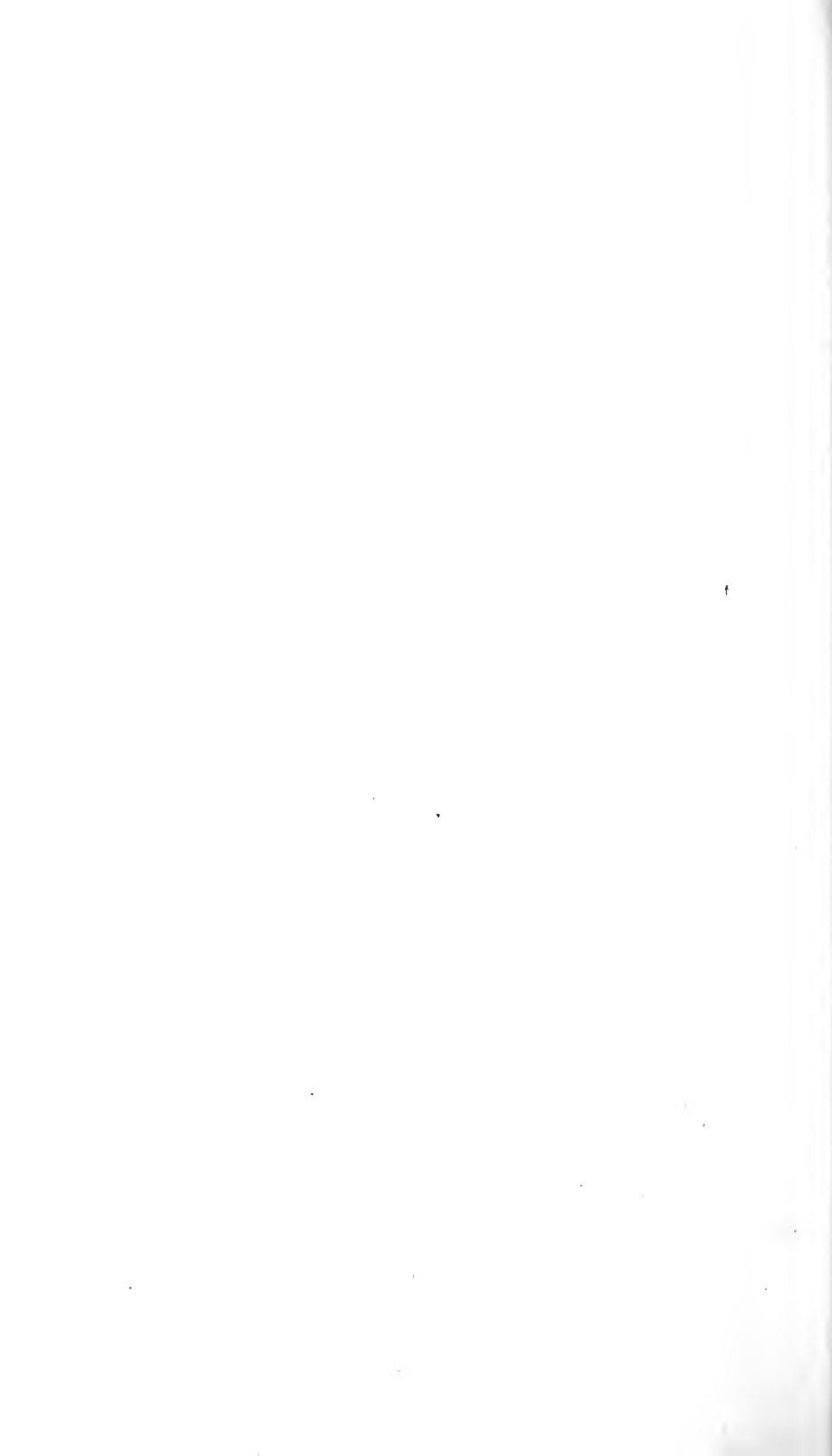
School Gardens, by Erasmus Schab. Translated by Mrs. Horace Mann.

ERRATUM.

On page 25, fourth line from top of page, before the word "acquired," read "has" for "his."



BIENNIAL REPORT
OF THE
REGENTS OF THE UNIVERSITY
OF
CALIFORNIA,
FOR THE YEARS 1877-9.



REPORT.

UNIVERSITY OF CALIFORNIA, }
BERKELEY, August 1st, 1879. }

To His Excellency, William Irwin, Governor of California:

DEAR SIR: In pursuance of the law, and of the instructions of the Board of Regents, I herewith transmit to you the Biennial Report of the Regents of the University of California for the two years included between July 1st, 1877, and July 1st, 1879.

Very respectfully yours,

ROBERT E. C. STEARNS,
Secretary of the Board of Regents of the University of California.

REPORT.

To the Honorable the Board of Regents of the University of California:

GENTLEMEN: In conformity with the requirements of Section 1432, paragraph 17, of the Political Code of California, I herewith present a Biennial Report for the term included between the 30th day of June, 1877, and the 30th day of June, 1879.

JOHN LECONTE, President.

UNIVERSITY OF CALIFORNIA, BERKELEY, July 1st, 1879.

I.—COLLEGES IN THE UNIVERSITY.

The University embraces seven courses of study, commonly called "Colleges," namely:

In Science: Agriculture, Mechanics, Engineering, Chemistry, Mining, and Medicine.⁽¹⁾

In Letters: Classical, and Literary.

For the Colleges in Science, as well as for the literary course in the College of Letters, the degree given at the close of the course is that of Bachelor of Philosophy. For the Classical Course, the degree is that of Bachelor of Arts; in the Medical College, the degree is Doctor of Medicine.

The Scientific Courses correspond very closely with the modern courses established in the institutions of other States which received the congressional grant of 1862. They are intended to give the student a good preparation for the pursuits of Agriculture, Mining, Engineering, Mechanics, and Chemistry. The studies of the first two years are very nearly the same in all these Colleges. In the last two years the special studies predominate.

The Literary Course is based upon History and the general scientific studies, including Mathematics, Physics, Chemistry, Geology, etc.; Modern Languages, including Anglo-Saxon, English, French, and German, with the option of others.

The Classical Course corresponds closely with that of Classical Colleges at the East.

(1) The College of Medicine is in San Francisco; it is under a separate Faculty, and is self-supporting. The California College of Pharmacy has been affiliated with the University, retaining its own organization. Neither of these Colleges receive any part of the State appropriations.

CLASSES OF STUDENTS.

The students at Berkeley are not only enrolled in separate Colleges, but in each College they may enter in regular or special courses. The regular courses are strongly recommended instead of special courses, to those who want a thorough and systematic education. The special courses are adapted to those who desire to acquire proficiency in a single branch, or who are unable to remain long enough to pursue a full course.

Special Course Students.—Those are thus designated who take up but one or two lines of study, and they are not required to pass the general examinations for admission. They need only to satisfy the Instructors in their specialties that they are qualified to profit by the exercises of the class. The permission is accorded only to those who have already made a considerable proficiency in knowledge. Access may thus be obtained to some scientific course, to the chemical laboratory, to instruction in some modern language, etc.

Students at Large.—Students who give all their time to special studies are designated as Students at Large. They are subject to all the regulations of the University, and are expected to make up for themselves a full schedule of study, approved by the Faculty. They will be required to pass the same entrance examination as candidates for the Colleges of Science, and may, by vote of the Faculty, be admitted as candidates for degrees.

Optional Studies.—Students already proficient in the studies laid down in the general scheme which they are following, or who have extra time at their disposal, may pursue optional studies, with the permission of the Faculty; or they may attend lectures and exercises appointed for other sections of the University, if it does not conflict with their regular appointments.

NOTE.—Regular students who may fail to maintain their standing in one of the four classes will not be permitted, except in extraordinary cases, to take the position of Special Students.

EXAMINATIONS.

In all the courses of the University, the instruction, whether by lectures or text-books, is accompanied by daily examinations.

Term examinations are held at the close of the first term, on the studies of the term. These examinations are either in writing or oral, according to the nature of the study.

Annual examinations are held at the close of each academic year. They cover the ground gone over during the year, and the four thus held constitute the examination for a degree. These examinations are chiefly in writing.

EXAMINATIONS FOR DEGREES.

For students passing through the University, these examinations are annual, as stated above, and there is no other examination covering the whole course. But the law provides such a general examination for those who have studied elsewhere:

Students who shall have passed not less than a full year as resident students in any college, academy, or school in this State, and, after examination by the respective Faculty of such college, academy, or school, are recommended by such Faculty as proficient candidates for any degree in any regular course of the University, shall be entitled to be examined therefor at the annual examination; and on passing such examination shall receive such degree for that course, and the diploma of the University therefor, and shall rank and be considered in all respects as graduates of the University.

All students of the University who have been resident students thereof for not less than one year, and all graduates of the University in any course, may present themselves for examination in any other course or courses, at the annual examinations, and, on passing such examination, shall receive the degree and diploma of that course.

GRADUATION THESES.

As a part of the final examination for degrees, every candidate is required to prepare a thesis upon a subject to which he has given special attention.

Members of the Senior Class will be required to announce their subjects to the Faculty (with a brief analysis of the proposed method of discussion), at the close of the winter vacation. The theses, written out in their complete form, must be handed in to the Faculty on the 15th of April. These papers will be examined and marked, and the mark assigned to them will have an important weight in determining the standing of the candidate for his entire course. The improper use of the materials or thoughts of others will cause the thesis to be entirely thrown out. Portions of the theses adjudged the best will be publicly read, in the presence of the Faculty and class, upon appointed days. The estimate of the Faculty will not depend upon the number of pages submitted, but on the amount of care and thought evinced by the work. The object of this regulation is to encourage special original investigations upon important themes growing out of, or suggested by, the several courses of study pursued in the University, and to afford a good opportunity for stating, in a clear and definite style, the result of such researches.

REGENTS.

EX OFFICIO REGENTS:

HIS EXCELLENCY, WILLIAM IRWIN	SACRAMENTO.
<i>Governor, ex officio President of the Board.</i>	
HIS HONOR, J. A. JOHNSON	SAN QUENTIN.
<i>Lieutenant-Governor.</i>	
HON. C. P. BERRY	WHEATLAND.
<i>Speaker of the Assembly.</i>	
HON. EZRA S. CARR	SACRAMENTO.
<i>State Superintendent of Public Instruction.</i>	
HON. H. M. LARUE	SACRAMENTO.
<i>President of the State Agricultural Society.</i>	
IRVING M. SCOTT, Esq.	SAN FRANCISCO.
<i>President of the Mechanics' Institute of San Francisco.</i>	
JOHN LÉCONTE	BERKELEY.
<i>President of the University.</i>	

APPOINTED REGENTS:

REV. H. STEBBINS, D. D.	SAN FRANCISCO.
HON. LAWRENCE ARCHER	SAN JOSÉ.
J. WEST MARTIN, Esq.	OAKLAND.
HON. SAMUEL B. MCKEE	OAKLAND.
HON. JOHN F. SWIFT	SAN FRANCISCO.
JOSEPH W. WINANS, Esq.	SAN FRANCISCO.
J. MORA MOSS, Esq.	OAKLAND.
A. S. HALLIDIE, Esq.	SAN FRANCISCO.
D. O. MILLS, Esq.	MILBRAE.
JOHN L. BEARD, Esq.	CENTERVILLE.
HON. FRANK M. PIXLEY	SAN FRANCISCO.
HON. WILLIAM T. WALLACE	SAN FRANCISCO.
HON. EUGENE CASSERLY	SAN FRANCISCO.
PROF. GEORGE DAVIDSON	SAN FRANCISCO.
HON. JOHN S. HAGER	SAN FRANCISCO.

HONORARY REGENTS:*

A. J. BOWIE, Esq.	SAN FRANCISCO.
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*The term "Honorary," applied to these Regents, indicates only the mode of their election, which was made by the Ex Officio and Appointed Regents. Every Regent is a full member of the Board.

EXECUTIVE OFFICERS.

President of the University,
PROFESSOR JOHN LECONTE.

*Advisory Committee,**
REGENTS STEBBINS, MOSS, MARTIN, WINANS AND DAVIDSON.

Committee on United States Agricultural Land Grant,
REGENTS WINANS, SWIFT AND SCOTT.

Committee on Buildings, Grounds, and other Property,
REGENTS HAGER, MARTIN AND DAVIDSON.

Committee on Auditing and Finance,
REGENTS HALLIDIE, MILLS AND MOSS.

Law Committee,
REGENTS WALLACE, MCKEE AND ARCHER.

Treasurer,
D. O. MILLS.

Secretary and Superintendent of the Grounds,
ROBERT E. C. STEARNS.

Dean of the Academic Senate,
MARTIN KELLOGG.

Land Agent and Assistant Secretary,
J. HAM. HARRIS,

Assistant Land Agent,
H. M. DE HART.

ACADEMIC SENATE.

JOHN LECONTE, M. D.,
President, and Professor of Physics.

WILLIAM ASHBURNER,
Honorary Professor of Mining.

GEO. WOODBURY BUNNELL, A. M.,
Professor of the Greek Language and Literature.

GEORGE DAVIDSON, A. M.,
Honorary Professor of Geodesy and Astronomy.

*The Advisory Committee is elected by the Board; the other standing committees are appointed by the Governor, as President of the Board.

STEPHEN J. FIELD, LL. D.,
Honorary Professor of Law.

Professor of Military Science and Tactics.

FREDERICK G. HESSE,
Professor of Industrial Mechanics.

EUGENE W. HILGARD, PH. D.,
Professor of Agriculture, Agricultural Chemistry, General and Economic Botany.

MARTIN KELLOGG, A. M.,
Dean, and Professor of the Latin Language and Literature.

JOSEPH LÉCONTE, M. D.,
Professor of Geology and Natural History.

BERNARD MOSES, PH. D.,
Professor of History and Political Economy.

WILLARD B. RISING, PH. D.,
Professor of Chemistry.

EDWARD R. SILL, A. M.,
Professor of the English Language and Literature.

FRANK SOULÉ, JR.,
 (U. S. Military Academy),
Professor of Civil Engineering and Astronomy.

WILLIAM T. WELCKER,
 (U. S. Military Academy),
Professor of Mathematics.

GEORGE F. BECKER, A. B., PH. D.,
Instructor in Mining and Metallurgy.

JOHN W. BICE, PH. B.,
Instructor in Civil Engineering.

EDWARD BOOTH, PH. B.,
Instructor in Chemistry.

ROSS E. BROWNE,
Instructor in Mechanical and other branches of Instrumental Drawing.

SAMUEL B. CHRISTY, PH. B.,
Instructor in Chemistry.

JOHN B. CLARKE, PH. B.,
Instructor in Mathematics.

GEORGE C. EDWARDS, PH. B.,
Instructor in Mathematics.

CARLOS F. GOMPERTZ,
Instructor in Spanish.

LEANDER L. HAWKINS, C. E.,

Instructor in Mathematics and Surveying (Field Practice).

A. WENDELL JACKSON, JR., PH. B.,

Instructor in Mineralogy.

HENRY B. JONES,

Assistant Instructor in French and German.

WM. CAREY JONES, A. M.,

Recorder of the Faculty, and Instructor in Latin.

F. W. MORSE, PH. B.,

Assistant in College of Agriculture.

EDWARD A. PARKER, PH. B.,

Instructor in Physics and Mechanics.

JAMES M. PHILLIPS, A. B.,

Instructor in Hebrew, Chaldaic, and Syriac.

ALBIN PUTZKER,

Instructor in German.

JOSEPH C. ROWELL, A. B.,

Librarian.

JOSIAH ROYCE, JR., PH. D., BALT.,

Instructor in the English Language and Literature.

E. H. SEARS, A. B.,

Instructor in Latin and Greek.

FRANK J. SOLINSKY, PH. B.,

Instructor in Mathematics.

JOHN M. STILLMAN, PH. B.,

Instructor in Chemistry.

AUGUST HARDING,

Assistant in Chemistry.

CHARLES H. DWINELLE,

Lecturer on Practical Agriculture.

J. J. RIVERS,

Curator of Museum.

JOHN ELLIS,

Gardener.

ABEL WHITTON,

Manager University Press.

JANITORS:

GEORGE GLEASON,

North Hall.

JOHN HART,

South Hall.

E. A. SAWYER,

Harmon Gymnasium.

E. P. CARPENTER,

Mechanical Arts College Building.

STUDENTS.

RESIDENT GRADUATES PURSUING ADVANCED STUDIES UNDER DIRECTION OF
THE FACULTY.

Name.	Residence.
Henry Bernard, Ph. B.	San Francisco.
Charles Butters, Ph. B.	Berkeley.
Marie D. Cole, Ph. B.	St. Helena.
Charles H. Congdon, Ph. B.	San Francisco.
Ella H. DeWolfe, Ph. B.	San Francisco.
Edmund C. O'Neill, Ph. B.	Oakland.
George B. Willcutt, Ph. B.	Oakland.
Total	7

FIRST, OR SENIOR CLASS.

Name.	Course.	Residence.
George A. Atherton	Engineering	Novato.
Henry W. Bodwell	Engineering	San Francisco.
Edith Briggs	Literary	Alameda.
Henry W. Buckley	Mechanics	Martinez.
Samuel A. Chambers	Classical	Sacramento.
Harry W. Carroll	Mining	Sacramento.
George E. Colby	Agriculture	Oakland.
Edward L. Collins	Literary	Oakland.
John G. Conrad	Mining	San Francisco.
Abraham A. D'Ancona	Classical	San Francisco.
Belle D. Davis	Classical	San José.
Wallace Dinsmore	Literary	Rohnerville.
Milton S. Eisner	Classical	San Francisco.
O. M. Enslow	Engineering	Oroville.
Dwight W. Fox	Literary	Garden Valley.
Louis N. France	Literary	Gridley.
Hugh W. Fraser	Literary	San Francisco.
John P. Gray	Literary	Berkeley.
Lewis G. Harrier	Literary	Vallejo.
Mary A. Hawley	Literary	Oakland.
Jacob Hoeck	Literary	San Francisco.
George Hughes	Literary	Nevada City.
Eugene LaRue	Literary	Sacramento.
Louis H. Long, Jr.	Mining	Vallejo.
Charles C. McCarty	Classical	Seattle, W. T.
Lulu E. Medbery	Classical	Berkeley.
Mark C. Meyer	Literary	San Francisco.
William E. Osborn	Literary	Sacramento.
H. C. Perry	Engineering	Gibsonville.
Mark Platshek	Classical	San Francisco.
George W. Ray	Engineering	North San Juan.
William Roalfe	Engineering	San Francisco.
Michael Seeligsohn	Classical	San Francisco.
E. H. Shepard	Mining	San Francisco.
A. D. Tenney	Classical	Oakland.
Arthur L. Whitney	Literary	Petaluma.
Katie F. Woolsey	Literary	Berkeley.
Total		37

SECOND, OR JUNIOR CLASS.

Name.	Course.	Residence.
Frank B. Adams	Classical	Oakland.
Ella F. Bailey	Literary	San Francisco.
Lizzie Barrett	Literary	Merced Falls.
Jennie Barry	Literary	Watsonville.
Fannie Bernstein	Scientific	Los Angeles.
Albert D. Bird	Literary	Placerville.
Edgar H. Booth	Mechanics	San Francisco.
Adah Bragg	Chemistry	San Francisco.
Russell W. Clarke	Mechanics	Berkeley.
Charles M. Coon	Mechanics	Menlo Park.
George Cumming, Jr.	Mechanics	San Francisco.
Leonard C. Fisher	Scientific	Oakland.
William W. Gill	Scientific	Oakland.
Annie L. Gilmore	Literary	Placerville.
Charles S. Greene	Classical	Berkeley.
Harry H. Haskell	Literary	San Francisco.
John W. Havens	Mining	Berkeley.
Louis L. Janes	Literary	San Francisco.
Horace G. Kelsey	Scientific	Merced Falls.
Douglas Lindley	Mining	Sacramento.
Max Loewenthal	Classical	Sacramento.
Henry S. Mannheim	Scientific	San Francisco.
Seth Mann	Classical	San Francisco.
Walter D. Mansfield	Classical	Napa City.
Reuben W. Mastick	Chemistry	Alameda.
Robert McClure	Engineering	Point Arena.
James J. McGillivray	Classical	Oakland.
Samuel C. Meyer	Literary	San Francisco.
Robert Moore	Mechanics	San Francisco.
Herman Partsch	Scientific	Cholame Valley.
Hiram A. Pearsons	Scientific	San Francisco.
Alice E. Pratt	Literary	St. Helena.
Harry Russell	Mining	Sacramento.
Kate O. Sessions	Scientific	East Oakland.
C. Shainwald	Literary	San Francisco.
Joseph A. Shaw	Engineering	Ferndale.
Louis Sloss, Jr.	Classical	San Francisco.
Daniel Suter	Scientific	San Francisco.
Crayton W. Wilkinson	Mechanics	Berkeley.
Harry P. Winegar	Classical	San Francisco.
Total		40

THIRD, OR SOPHOMORE CLASS.

Name.	Course.	Residence.
James Akerly	Scientific	Oakland.
William D. Armes	Literary	Oakland.
Benjamin Armington	Classical	Stockton.
Albert M. Armstrong	Literary	San Francisco.
John W. Atkinson	Scientific	Oakland.
David Barcroft	Scientific	Hornitos.
Rufus A. Berry	Scientific	Wheatland.
Bernard Bienenfeld	Scientific	San Francisco.
John S. Bishop	Literary	Honolulu, H. I.
Willie M. Bours	Classical	Stockton.
P. E. Bowles	Scientific	San Francisco.
Henry Brown, Jr.	Literary	Napa.
Henry A. Chaplin	Literary	Stockton.
Warren T. Clarke	Literary	Berkeley.
Joseph L. Crittenden	Scientific	San José.

THIRD, OR SOPHOMORE CLASS—Continued.

Name.	Course.	Residence.
Zenas U. Dodge	Classical	San Francisco.
Diademus S. Dorn	Literary	Watsonville.
Murry H. Durst	Scientific	Wheatland.
John J. Dwyer	Classical	San Francisco.
Annie C. Edmonds	Literary	San Francisco.
Harry M. Edmonds	Classical	San Francisco.
Charles A. Edwards	Literary	Santa Barbara.
Selim M. Franklin	Literary	San Bernardino.
William H. Griswold	Classical	San Francisco.
Henry C. Hampton	Scientific	Sonora.
Charles E. Hayes	Scientific	Oakland.
William Herrod	Scientific	Grass Valley.
Katie H. Hittell	Classical	San Francisco.
Robert Hooker	Scientific	San Francisco.
Robert D. Jackson	Scientific	East Oakland.
Oscar W. Jasper	Scientific	Wheatland.
Howard D. Kercheval	Scientific	Courtland.
Samuel Levy	Scientific	San Francisco.
John W. Lewis	Scientific	Red Bluff.
Jerome B. Lincoln	Classical	San Francisco.
Valentine C. McMurry	Scientific	Camptonville.
William W. Nelson	Scientific	Woodland.
Addison P. Niles	Scientific	San Francisco.
Charles H. Oatman	Literary	Sacramento.
Cutler Paige	Literary	San Francisco.
Alexander F. Pollock	Scientific	San Francisco.
Norman A. Rideout	Literary	Marysville.
Fletcher F. Ryer	Classical	San Francisco.
Niles Searls, Jr.	Scientific	Nevada City.
Jennie H. Shattuck	Literary	San Francisco.
Stanly Stillman	Classical	San Francisco.
Eva Stoddart	Scientific	San Francisco.
Caroline J. Swyney	Classical	Alameda.
Earl H. Webb	Scientific	East Oakland.
Howard L. Weed	Scientific	Grass Valley.
George F. Whitworth, Jr.	Literary	San Francisco.
John H. Wigmore	Classical	San Francisco.
F. N. Woodman	Scientific	San Francisco.
Total		53

FOURTH, OR FRESHMAN CLASS.

Name.	Course.	Residence.
Jeremiah Ahern	Scientific	Berkeley.
Florence Bartling	Classical	Oakland.
Flora E. Beal	Literary	San José.
Fannie M. Bliven	Literary	San Francisco.
Frances Bracken	Literary	Oakland.
William Bradford, Jr.	Literary	Napa.
George B. Brastow	Classical	Santa Barbara.
William W. Brown	Literary	San José.
Fred L. Burk	Literary	Berkeley.
Armor Carnall	Classical	Berkeley.
Will E. Conner	Classical	San Francisco.
Walter B. Cope	Classical	Oakland.
Martha S. Day	Classical	Berkeley.
William W. Deamer	Classical	Grass Valley.
John C. Dement	Scientific	San Francisco.
Guy C. Earl	Classical	Oakland.
Sarah H. Ellery	Literary	Alameda.

FOURTH, OR FRESHMAN CLASS —Continued.

Name.	Course.	Residence.
William C. Fife	Scientific	Oakland.
William H. Fiske	Literary	San Francisco.
Robert M. Fitzgerald	Literary	Berkeley.
Marcus W. Fredrick	Literary	San Francisco.
Eddie Frick	Literary	Lewiston.
Jesse E. Frick	Literary	Lewiston.
Edward G. Frisbie	Literary	Vallejo.
Samuel E. Goodall	Scientific	San Francisco.
Theodore Grady	Literary	Berkeley.
Sidney L. Gulick	Classical	Oakland.
John H. Hanson	Literary	Berkeley.
Edward N. Harmon	Classical	San Francisco.
Myron P. Harris	Literary	Grass Valley.
Edwin M. Hawley	Literary	Alvarado.
Brenton A. Hayne	Classical	Santa Barbara.
James P. Hays	Scientific	Pacheco.
George B. Henry	Literary	San Francisco.
Charles J. Hittell	Literary	San Francisco.
Lottie M. Hollister	Literary	Oakland.
William F. Holmes	Scientific	Santa Rosa.
Frank E. Hunewill	Literary	Bridgeport.
Alfred J. Ivers	Literary	San Francisco.
Leroy B. Johnson	Scientific	Nevada City.
Isaac Joseph	Scientific	Sacramento.
Arthur L. Kelsey	Scientific	Merced Falls.
William G. Lanigan	Classical	San Francisco.
Edward L. Lawrence	Scientific	Fruit Vale.
Thomas M. Lindley	Literary	Sacramento.
Edward M. Louisson	Scientific	San Francisco.
Frederick W. Lux	Scientific	San Francisco.
John W. Mailliard	Scientific	San Rafael.
Millie Medbery	Scientific	Berkeley.
Clarence S. Merrill	Scientific	Berkeley.
Charles T. Millikin	Scientific	Sacramento.
Ferdinand C. Mosebach, Jr.	Classical	San Francisco.
Jerome Newman	Scientific	San Francisco.
William B. Noble	Classical	Berkeley.
June B. Noyes	Literary	Berkeley.
Fred. G. Ostrander	Literary	Merced.
Walter M. Painter	Scientific	San Francisco.
Harry H. Patterson	Scientific	Yreka.
James F. Peck	Scientific	Merced.
Joseph B. Pownall	Scientific	San Francisco.
Edgar Reinhart	Literary	San Francisco.
Naunie N. Ridge	Literary	Grass Valley.
J. Alfred Roncovieri	Scientific	San Francisco.
Abraham Ruef	Classical	San Francisco.
John W. Ryan	Scientific	Oakland.
Edmund C. Sanford	Classical	Oakland.
Lillian M. Shepard	Literary	Berkeley.
Charles W. Simmons	Literary	Mokelumne Hill.
Willie W. B. Stevens	Literary	Grass Valley.
Samuel T. Stine	Literary	Yreka.
Andrew Thorne	Literary	San Francisco.
Douglas Tilden	Literary	San Francisco.
William B. Turner	Literary	Napa.
Earle A. Walcott	Literary	Santa Barbara.
Henry W. Walker	Classical	San Mateo.
Frank J. Walton	Literary	San Buenaventura.
Harry D. Wilson	Literary	Oakland.

Total 77

STUDENTS AT LARGE.

Name.	Course.	Residence.
Richard P. Ashe	Literary	San Francisco.
Orlan Black	Literary	San Francisco.
W. W. Brier	Scientific	Centreville.
James W. Byrne	Literary	San Francisco.
Fred H. Clark	Classical	Berkeley.
G. Gertrude Collins	Literary	Alameda.
Ernest V. Cowell	Scientific	Santa Cruz.
Martha A. Dougherty	Literary	Berkeley.
Fannie Dougherty	Literary	Berkeley.
James P. Dunn	Literary	Berkeley.
Charles H. Foote	Literary	Lockeford.
Charles H. Grimm	Literary	San Francisco.
Reinhardt T. Harding	Literary	Oakland.
Fred Irwin	Literary	Placerville.
Samuel Louissou	Literary	San Francisco.
Albert Painter	Literary	San Francisco.
George F. Schorr	Literary	Gridley.
Nellie P. Sell	Literary	Berkeley.
Hattie J. Shaw	Literary	Berkeley.
Adrian H. Snider	Classical	Sacramento.
Sadie T. St. John	Literary	Salinas City.
George R. Walden	Scientific	Napa.
Adolph H. Weber	Agriculture	San Francisco.
Frank Wilkins	Literary	Berkeley.
Total		24

SPECIAL STUDENTS.

Name.	Course.	Residence.
May Anderson	Literary	Snelling.
Yezaburro Arrow	Chemistry	Berkeley.
William M. Arthur	Chemistry	Oakland.
Annie E. Beale	Literary	Oakland.
Margaret Blake	Literary	Farmersville.
Arthur J. Caire	Mining	Oakland.
Lilly S. Crow	Literary	Crow's Landing.
Adelaide Cushing	Literary	Oakland.
Fannie M. Davis	Literary	San José.
Frank Galindo	Scientific	Temescal.
Emily Gill	Literary	Oakland.
Hattie I. Hager	Literary	Yreka.
Katharine Head	Literary	Berkeley.
Kate Hodgkinson	Literary	Carson, Nev.
George B. Jacobs	Chemistry	Oakland.
Ruth M. Jacobs	Literary	Oakland.
M. Hortense Kittrell	Literary	Bodie.
Annie S. E. Long	Literary	Vallejo.
Clara A. McCarty	Literary	Berkeley.
A. B. Merrill	Scientific	Berkeley.
Ermentine A. Poole	Literary	Oakland.
Arthur F. Price	Chemistry	San Francisco.
Avery Scoville	Mining	Oakland.
William H. Taylor	Scientific	Oakland.
Mollie Woolsey	Literary	Berkeley.
Total		25

SUMMARY OF STUDENTS.

SUMMARY.

COLLEGES OF SCIENCE AND OF LETTERS.

Whole number	263
Young men	210
Young ladies	53

I.—ARRANGED BY COURSES.

Post-graduates	7
Candidates for the Bachelor's Degree	207
Students at Large	24
Special Course Students	25
Total	263

II.—ARRANGED BY COLLEGES.

Students in the five Colleges of Science	83
Students in the College of Letters:	
Classical	45
Literary	79
	124
Students at Large and Special	49
Students Post-graduate	7
Total	263

NOTE.—The Students in the Scientific Colleges are not required to announce the special College (i. e., Agriculture, Mechanics, Mining, Chemistry, or Engineering) they choose to enter, until the beginning of the second year.

III.—ARRANGED BY CLASSES.

	Science.	Letters.	Total.
Senior, or First Class	12	25	37
Junior, or Second Class	22	18	40
Sophomore, or Third Class	26	27	53
Freshman, or Fourth Class	23	54	77
Totals	83	124	207
Not assigned to classes			56
Total			263

NOTE.—Many of the Students at Large, and some of the Special Course Students, are pursuing nearly full courses in connection with some one of the Colleges. Many of these expect to become candidates for a degree.

GRADUATES, JUNE 5TH, 1878, WITH THE SUBJECTS OF THEIR THESES.

BACHELORS OF PHILOSOPHY (SCIENCE).

Lemuel Warren Cheney (Mining)	Chico.
"A Method of Machine River-bed Working for Gold."	
Frank Gray Easterby (Mechanics)	Napa.
"Required to Find the Dynamic State of a given Machine without a Dynamometer, but by Means of Experimental Data."	
George Everett Fogg (Mining)	Oakland.
"Dust Chambers and their Products."	
Joseph Hutchinson (Mining)	San Francisco.
"Judson Powder."	
Walter Brewster Jones (Chemistry)	Benicia.
"The Probability of profitable Iodine Manufacture on the Pacific Coast, from an Analysis of Sea Weed, <i>Laminaria Andersonii</i> ."	

Frank William Maher (Engineering)	San Francisco.
"A Method of Determining the Size of Culverts."	
Fred Wellington Morse (Chemistry)	Chico.
"A Chemical Analysis of Bittern."	
William Richard Poyzer (Engineering)	Grass Valley.
"A Proposed Sewerage System for the Town of Alameda."	

BACHELORS OF PHILOSOPHY (LETTERS).

James Bruce Clow	Oakland.
"Communism in the United States."	
Charles Munson Stetson	Ceres.
"The Rise and Development of Scotch Presbyterianism."	
May Benton Treat	San Francisco.
"The Modern Tendencies of Psychology."	
Arria Marshall Wertz	St. Helena.
"The Practical Importance of the Study of Psychology."	
Frederick William Zeile	San Francisco.
"Charles Dickens."	

BACHELORS OF ARTS.

Clara Bartling	Oakland.
"The Future of Morality."	
William Raymond Daingerfield	San Francisco.
"Minorities and Majorities in Representative Bodies."	
Walter Forsyth Finnie	Grass Valley.
"The Increase of Capital and its Effects upon the Laboring Classes."	
Fiesco Mandlebaum	San Francisco.
"The Poetry of Robert Browning."	
Alexander Francis Morrison	San Francisco.
"Property in Land."	
William Fulton Soule	San Francisco.
"The Development of Reason."	
Edgar Curtiss Sutcliffe	San Francisco.
"Greek Philosophy."	
Thomas Orlando Toland	Berkeley.
"The Nature and Limits of Economics."	
William Martin Van Dyke	East Oakland.
"Means of Improving the Condition of the Laboring Classes."	
Clarence Harrison Warren	San Mateo.
"Monopolies."	
Frank Randolph Whitcomb	San Francisco.
"Capital and Labor."	
Joseph William Winans	San Francisco.
"The Advantages of a Classical Education."	

GRADUATES, JUNE 4TH, 1879, WITH THE SUBJECTS OF THEIR THESES.

BACHELORS OF PHILOSOPHY (SCIENCE).

Christopher Stoddard Batterman (Engineering)	Carson, Nevada.
"A Wire Rope Railway."	
Morris Bien (Engineering)	San Francisco.
"Deduction and Discussion of the General Equation of Trochoid Curves."	
Charles Butters (Mechanics)	Berkeley.
"A Discussion of the Centrifugal Pump, and its application to Irrigation."	
Alexander James Campbell (Engineering)	Honolulu, H. I.
"The Harmon Gymnasium Roof."	
William Scott Charleston (Engineering)	Mountain View.
"A Practical Problem in Railroad Engineering."	
Charles Henry Congdon (Mining)	San Francisco.
"The Scott and Huttner Furnace for Roasting and Desulphurizing Quicksilver Ores."	
Bertram Harvey Dunshee (Mining)	Santa Barbara.
"Chemico-Metallurgical Examination of Arsenical Pyrites."	
George Sexton Edwards (Mining)	Santa Barbara.
"Report on Ione Coal."	
Carlton Everett (Engineering)	Oakland.
"A Graphical Study of a Parabolic Arched Truss."	
George Powers Kelsey (Engineering)	Merced Falls.
"Determination of the Status, and Discussion of the Efficiency of the Brayton Hydrocarbon Engine."	
William Howland Leffingwell (Mechanics)	San Rafael.
"Discussion of the Motion Curve for the Single Crank."	
Thomas Addis McMahon (Engineering)	Martinez.
"A proposed Water Supply for the Town of Martinez."	
Fremont Morse (Engineering)	Bolinas.
"Experiments on the Strength of Redwood and Oregon Pine."	
Robert William Musgrave (Chemistry)	Grass Valley.
"A Chemical Analysis of Water from Sulphur Bank, Lake County."	
Walter Henry Nicholson (Mining)	San Francisco.
"The Concentration of Auriferous Pyrites."	
James O'Callaghan (Mining)	San Francisco.
"Coal Mining at Mount Diablo."	
Edmund Charles O'Neill (Agriculture)	Oakland.
"Absorption of Hygroscopic Moisture by Cereal Grains."	
Edward Reed (Chemistry)	Snellings.
"An Analysis of Pyrargyrite."	
Henry William Sander (Mining)	San Francisco.
"An Examination of the Acid Waters from the Mercury Condensing Chambers at New Almaden."	
Charles William Slack (Mechanics)	Cambria.
"A Problem in the Transmission of Power."	
George Arnold Stanley (Engineering)	San Francisco.
"Analysis of Second Street Bridge, San Francisco."	

Clarence Holmes Wallace (Engineering)..... Napa.
 "A Correction for Phase in Trigonometrical Surveying."
 John Hoffman Wheeler (Mining)..... St. Helena.
 "Report on the Claims, Exploitation, and Processes of the Pope Valley Quicksilver Mining
 Company."

George Beal Willeutt (Chemistry).....Oakland.
 "The Behavior of Arsenic Acid towards Sulphydric Acid."

Tulio Ospina.....Medellin, United States of Colombia.
 "Mining in the State of Antioquia."

Pedro Nel Ospina.....Medellin, United States of Colombia.
 "The Theories as to the Causes of Earthquakes."

BACHELORS OF PHILOSOPHY (LETTERS).

Charlotte Bockius.....Watsonville.
 "The Subjective Character of the Phenomena of Spiritualism."

Alice Maud Boyver.....San Francisco.
 "Runes."

John Quincy Brown, Jr.....Sacramento.
 "Early Guilds and Modern Trades-Unions."

Martha Rosalind Chase.....Martinez.
 "Dogmatism in Free Thinking."

Maria Delia Cole.....St. Helena.
 "Modern Beliefs and Tendencies."

Ella H. DeWolfe.....San Francisco.
 "Interdependence of Industry."

Mareellus Americus Dorn.....Watsonville.
 "Theories of Population."

Lansing Mizner.....Benicia.
 "Lawism."

James Alexander Morrow.....Oakland.
 "Paper Money in the United States."

William Henry Morrow.....Oakland.
 "Public Debts."

Henry William O'Melveny.....Los Angeles.
 "Constitutional Development of the English Ministry."

George Cooper Pardee.....Oakland.
 "Education as a Qualification for Suffrage."

Robert Albion Poppe.....Sonoma.
 "The State and the Higher Education."

Charles Monroe Sheffield.....San Francisco.
 "Rise and Growth of the English Drama."

Rhoda Louise Tucker.....Oakland.
 "The Tendency of the Times in respect to the Feelings and Imagination."

BACHELORS OF ARTS.

Franklin Joseph Bonney.....Oakland.
 "Woman in Greece: her Social Position."

William Henry Chapman	Sacramento.
"Free Trade <i>versus</i> Protection."	
Henry Irving Coon	Menlo Park.
"A Criticism of some recent Translations of Virgil's <i>Aeneid</i> ."	
Carroll Melvin Davis	Oakland.
"Influence of Improved Machinery on the Laborer."	

CIVIL ENGINEER (ON EXAMINATION).

Leander L. Hawkins, Ph. B.

MASTERS OF ARTS (IN COURSE).

William Rude Davis, A. B.; Frank Preston Deering, A. B.; William Carey Jones, A. B.; Myer Jacobs, Ph. B.; Peter Francisco Charles Sander, Ph. B.

COMMENCEMENT SPEAKERS.

CLASS OF EIGHTEEN HUNDRED AND SEVENTY-EIGHT.

May B. Treat	San Francisco.
Essay, "Free Thought."	
Joseph Hutchinson	San Francisco.
Oration, "The Mission of Physical Science."	
William M. Van Dyke	East Oakland.
Oration, "Civil Liberty."	

CLASS OF EIGHTEEN HUNDRED AND SEVENTY-NINE.

Morris Bien	San Francisco.
Oration, "The Student's Future."	
Anna Head	Berkeley.
Essay, "Some Defects in College Education and their Remedies."	
M. A. Dorn	Watsonville.
Oration, "The Field for Heroism."	

PRIZES.

THE UNIVERSITY MEDAL.*

Class of 1871	F. H. Whitworth.
Class of 1872	J. M. Whitworth.
Class of 1873	Frank Otis.
Class of 1874	Thomas F. Barry.
Class of 1875	Dwight B. Huntley.
Class of 1876	Fred L. Button.
Class of 1877	Theodore Gray.
Class of 1878	Joseph Hutchinson.
Class of 1879	Fremont Morse.

*The University Gold Medal (value \$125) to be awarded, according to the direction of the donors, "to the most distinguished graduate of the year."

This medal is procured from the income of a special fund, originally of two thousand dollars, which was contributed by the following gentlemen: Henry Durant, S. F. Butterworth, Andrew J. Moulder, William C. Ralston, William Watt, J. Mora Moss, Edward Tompkins, John W. Dwinelle, F. L. A. Pioche, A. A. Cohen, D. O. Mills, Barron & Co., P. H. Canavan, Haggin & Tevis, Richard P. Hammond, A. S. Hallidie, H. M. Newhall, William Morris, A. Hayward, Charles Mayne, William Alvord, Edmond L. Goold, L. L. Robinson, John S. Hager, H. A. Lyons, William Burling, John Benson, Lafayette Maynard, E. L. Sullivan, I. Friedlander, Louis Sachs, William A. Woodward, John B. Felton, Samuel Merritt, S. B. McKee, Thomas Findley, William Sharon, and William M. Lent.

FOR EXCELLENCE OF THESES, EIGHTEEN HUNDRED AND SEVENTY-EIGHT.

(A gift of \$100 from the Alumni of the University, in two equal parts: one for the best thesis in the Colleges of Science, the other for the best thesis in the College of Letters.)

Colleges of Science: W. R. Poyzer.

College of Letters: Clara Bartling.

OFFICERS OF THE BATTALION UNIVERSITY CADETS.

Commandant of Cadets—Lieutenant-Colonel George C. Edwards.

STAFF.

First Lieutenant and Adjutant—S. A. Chambers.

Second Lieutenant and Quartermaster—A. D. Tenney.

Sergeant-Major—J. P. Gray.

Sergeant and Chief Musician—Seth Mann.

COMPANY OFFICERS.

Captains—O. M. Enslow, L. N. France, H. W. Carroll.

First Lieutenants—A. L. Whitney, A. A. D'Ancona, H. C. Perry, L. H. Long.

Second Lieutenants—L. G. Harrier, E. LaRue, M. S. Eisner, H. W. Fraser.

First Sergeants—J. G. Conrad, M. C. Meyer, E. H. Shepard, E. L. Collins.

Sergeants—M. Platshek, G. W. Ray, A. H. Weber, D. W. Fox, W. Dinsmore, M. Seeligsohn, G. A. Atherton, G. Hughes, R. W. Clarke.

Corporals—H. G. Kelsey, L. C. Fisher, L. L. Janes, H. Russell, J. A. Shaw.

OUTLINE OF THE INSTRUCTIONS GIVEN IN THE DIFFERENT BRANCHES OF STUDY.

NOTE.—The outlines here given are of such studies or courses of study only as are common to several or all of the Colleges of Science and of Letters. The special studies peculiar to the particular Colleges are given in detail in the statements of the different Colleges on later pages of the Report.

MATHEMATICS.

FRESHMAN CLASS.

Algebra.—Solution of Equations, first and second degrees; Binomial Theorem: Extraction of Roots of any degree, both of numbers and algebraic quantities; Operations on Radicals of any degree, and upon quantities affected with fractional and negative exponents; Progressions and Proportions; Principle of Indeterminate Co-efficients; Summation of Series by the method of Differences, and by special methods; Solution of Exponential Equations; Theory of Logarithms; General Theory of Equations; different methods of Solving Numerical Equations of any degree. TEXT-BOOK: Davies' New Bourdon.

Geometry.—Instructions in Plane Geometry; Geometry of Three Dimensions, and Spherical Geometry; Exercises in Geometrical Invention; Loci; Symmetry; Maxima and Minima by Geometrical Methods; Harmonic Proportion and Harmonic Pencils; Polars, Centers of Similitude, etc. TEXT-BOOK: Olney's Geometry.

SOPHOMORE CLASS.

Trigonometry and Mensuration.—Thorough practical instruction in the use of Tables of Logarithms, and Logarithmic Functions, Plane and Analytical Trigonometry; Spherical Trigonometry, and Mensuration. TEXT-BOOK: Olney's Trigonometry.

Analytical Geometry.—Determinate and Indeterminate Geometry, including a full Examination of the Properties of the Conic Sections. TEXT-BOOK: Church's Analytical Geometry.

Descriptive Geometry.—Spherical Projections; Shades, Shadows, and Linear Perspective. TEXT-BOOK: Church's Descriptive Geometry.

JUNIOR CLASS.

Differential and Integral Calculus, and the Calculus of Variations. TEXT-BOOK: Church's Calculus.

PHYSICS AND MECHANICS.

The course of instruction in PHYSICS AND MECHANICS commences with the Second, or Sophomore year of the regular course, and is completed in three years.

The students in the Sophomore Class are occupied with the subject of HEAT: including Thermometry; Laws of Expansion of Solids, Liquids, and Gases; Laws of Conduction and Convection; Laws of Liquefaction and Solidification; Laws of Ebullition; Laws of Elas-

tic Force of Vapors; Theory of Steam Engine; Laws of Vaporization and Condensation; Spontaneous Evaporation; Hygrometry; Laws of Specific Heat; Sources of Heat; Mechanical Equivalent of Heat; Heat of Combustion; Dynamical Theory of Heat.

Then commences the course on MECHANICS: embracing General Properties of Matter; Measurement and Representation of Forces; Momentum; Uniform Motion; Uniformly Accelerated and Retarded Motion; Laws of Motion; Composition, Resolution, and Equilibrium of Forces; Composition and Resolution of Motions and Rotations; Principle of Moments; Theory of Parallel Forces; Theory of Couples; Curvilinear Motion, and the Laws of Centrifugal Force.

The students in the Junior Class continue the study of MECHANICS: including Laws of Gravity; Laws of Central Forces; Laws of Falling Bodies; Application of Theory of Parallel Forces to Center of Gravity and Stability; Elementary Machines and Theory of Machinery; Laws of Friction and Resistance to Motion; General Theorem of Work; Maximum Effect of Machines and Animals; Motion on Inclined Planes; Vibratory Motion; Theory of Pendulum and Applications; Laws of Impact; Moment of Inertia; Theory of Projectiles and application to Gunnery. MECHANICS OF LIQUIDS: including Transmission of Pressure; Pressure due to Weight; Buoyancy and Floatation; Application to Specific Gravity. *Motion of Liquids*: Spouting Liquids; Motion of Water in Pipes, Canals, and Rivers; Theory of Water Motors, and the Power of the various kinds of Water-wheels. MECHANICS OF GASES: including Laws of Compressibility and Elasticity; Pressure of the Atmosphere; Barometric Formula; Applications to Pumps, Siphons, Fire Engines, etc.; Theory of Resistance of Fluids.

The students of the Senior Class study: Mechanics of Capillarity. ELECTRICITY: including Laws of Electrical Action; Distribution of Electricity; Electrical Induction; Theory of Dielectric Induction; Theory of Leyden Jar and Electric Battery; Electric Light; Mechanical and Chemical Effects of Electricity; Cause of Electrical Phenomena; Atmospheric Electricity; Thunder Storms; Lightning-rods. MAGNETISM: embracing Laws of Magnetic Forces; Terrestrial Magnetism; Declination, Variation, and Dip of the Magnetic Needle; Diamagnetism. ELECTRO-MAGNETISM: including Fundamental Laws of Electro-Dynamics; Power of Electro-Magnets; Electro-Dynamic Induction; Magneto-Electricity; Theory of Induction-Coil; Thermo-Electricity; Law of Ohm; Economy of Electric Motors; and Theory of Electric Telegraph. ACOUSTICS: including Propagation of Sound, and Elastic Waves; Reflection, Refraction, and Interference of Sounds; Physical Theory of Music. OPTICS: embracing Theories of Propagation of Light; Velocity of Light; Photometry; Laws of Reflection and Refraction; Dispersion of Light; Spectroscope; Theory of Rainbows and Halos; Interference of Light; Diffraction; Polarization of Light; Theory of Vision; Theory of Optical Instruments.

The method of instruction is by means of lectures and recitations, accompanied by experimental demonstrations and the solution of practical problems.

The cabinet of physical apparatus is very complete, and additions are to be made to it each year.

TEXT-BOOK: Snell's edition of "Olmsted's Natural Philosophy." Recommended for reference: Atkinson's edition of Ganot's Physics;

Lardner's "Hand-Book of Natural Philosophy;" Silliman's "Principles of Physics;" Peck's Mechanics.

BOTANY.

Instruction in Botany begins with the Sophomore year. The study of Structural and Physiological Botany occupies the first term, the general course pursued being that of Gray's work on structural Botany, which is used as a work of reference. The lectures, alternating with recitations, are fully illustrated, partly by large scale drawings, partly by figures thrown on a screen by the magic lantern (Marcy's "Sciopticon").

Systematic and Economic Botany occupies the second term. After a discussion of the general principles of classification, the more important orders of the vegetable kingdom are taken up and fully characterized and illustrated. In connection with each, its economically important members are discussed and illustrated by figures and specimens, together with such details in regard to their culture and uses as are of interest to the general student.

The course of General and Economic Botany is optional for the students of the two literary courses, but its first term is obligatory for those of the scientific courses. It serves especially as an introduction to the agricultural course proper, from the most attractive point of view.

GEOLOGY AND NATURAL HISTORY.

The course of lectures in this department will commence in the Junior year with *Zoology*. It will include the comparative anatomy and physiology of animals and the principles of classification, and will be illustrated by a full set of diagrams, by the free use of the microscope, and, whenever possible, by dissections.

REFERENCES: Huxley's "Comparative Anatomy of Vertebrates;" Milne Edward's "Manual of Zoology;" Rymer Jones' "Animal Kingdom;" Todd's "Cyclopedia of Anatomy and Physiology;" Nicholson's "Manual of Zoology," and Orton's "Comparative Zoology."

Geology will commence with the Senior year. The first term will be occupied with lectures on *Dynamical and Structural Geology*. Under Dynamical Geology will be taken up all the agencies now at work modifying the earth's surface and producing structure, viz.: Atmospheric Agencies, River Agencies, Glacial Agencies, Ocean Agencies, Igneous Agencies, Organic Agencies, etc. Under Structural Geology will be discussed the General Structure of the Earth; the Structure and Position of Rocks; the Formation and Distribution of Fossils; the Occurrence and Origin of Mineral Veins; the Structure and Mode of Formation of Mountain Chains, etc. The lectures of the second term will be devoted to the History of the Earth and its Inhabitants. The history will be illustrated principally from American Geology, and, as far as possible, from the Geology of the State. Throughout the course special attention will be devoted to points of special interest, scientific or practical. The course is thoroughly illustrated by the use of an ample museum of rocks, ores, and fossils, and an extensive collection of Ward's Geological Casts.

REFERENCES: Dana's "Manual of Geology;" Lyell's "Principles of Geology;" Lyell's "Elements of Geology;" De la Beche's "Geological Observer;" Jukes's "Manual of Geology;" LeConte's "Elements of Geology."

MINERALOGY.

The course of lectures upon this subject is delivered to the Junior Class. The first term is mainly occupied with the discussion of the *Physical Properties of Minerals*, including their optical properties, their morphological properties (Crystallography), hardness, specific gravity, etc. Descriptive Mineralogy is also commenced during the latter part of this term, and is finished by the end of the second term. Special attention is paid to the ores—the manner of their geological occurrence, and the most important ore deposits of this country are especially described. A sufficient time at the conclusion of each lecture is devoted by the students to the careful examination of the minerals considered during the lecture. The lectures are fully illustrated by the use of the microscope.

During the Senior year, two hours a week are devoted to work in the mineralogical laboratory, in the practical determination of minerals by means of their physical properties alone. For this purpose, a special students' working collection has been arranged, consisting of the most common and important minerals, particular attention being paid to the ores. These are left unlabeled, and it is the work of the student to determine each species, with the use simply of a knife, a lens, a streak plate, and the general knowledge he has already derived of their physical appearance. The careful, conscientious determination of the minerals in this collection will enable the student to determine quickly and readily all of the common minerals, with the use of the above-mentioned instruments—such as can be carried in the vest pocket.

During the Senior year, a course of lectures is given upon the practical determination of minerals with the blow-pipe, *i. e.*, by means of their *chemical* properties, entirely independent of their *physical* properties. In addition to the lectures, the student has two hours a week laboratory practice with the blow-pipe.

It is earnestly recommended to those students intending to pursue the study of mineralogy as a specialty, that they make themselves familiar with the German language.

WORKS OF REFERENCE: Dana's "System of Mineralogy," (fifth edition); Nauman's "Mineralogie," (ninth edition); Weisbach's "Synopsis Mineralogica;" Frazer's translation of Weisbach's "Tabellen zur Bestimmung der Mineralien nach äusseren Kennzeichen;" Prime's translation of Von Cotta's "Lehre von den Erzlagernstätten;" Cornwall's translation of Plattner's "Probirkunst mit dem Löthrohre."

CHEMISTRY.

Instruction is given in General and Theoretical Chemistry by lectures, recitations, and laboratory practice. This course extends through three terms, one in Freshman year and two in Sophomore year, and embraces the elements of inorganic and organic chemistry. Students, after making themselves familiar with the details of experi-

ments, are required to repeat the same in the laboratory for elementary chemistry.

An advanced course of lectures will be given to students of the Junior and Senior Classes, in general and theoretical chemistry. This course will embrace a discussion of the general principles of the science, and their application to analytical and metallurgical chemistry, and to mineralogy.

The chemical laboratories are open daily for instruction in analytical chemistry.

The special courses in chemistry are given in the statements about the College of Chemistry.

SURVEYING.

Instruction in this branch is given by recitations, lectures, use of text-books and works of reference, and field-work. The general course in Surveying in the Colleges of Letters, Agriculture, Mechanics, and Chemistry is given in the latter half of the second term of the Sophomore year.

TEXT-BOOK: Murray's "Manual of Surveying."

The special courses in Civil and Mining Engineering are given in the statements of the Colleges of Engineering and Mining.

INDUSTRIAL DRAWING.

SOPHOMORE CLASS.

First Term.—Construction of geometrical problems relating to points, lines, circles, and polygons, and drawing of combinations of these problems to give practice in the use of instruments.

Second Term.—Drawing of problems in Descriptive Geometry, following the course given in this branch; practice in lettering for maps.

JUNIOR CLASS.

First Term.—Application of Descriptive Geometry to constructions of the Civil and Mechanical Engineer. Platting of field notes in surveying and leveling, and mapping, following the course in Civil Engineering.

Second Term.—Application of Descriptive Geometry continued, with shades and shadows. Platting of road and railroad work, earthwork, etc., following the course.

SENIOR CLASS.

First Term.—Construction of simple machines, screws, helical surfaces, teeth of wheels, gearing, etc.; examples of stone-cutting and masonry constructions.

Second Term.—Drawing of machine parts from models, etc.; drawing of joints, framing bridges, roofs, etc., following the course.

ASTRONOMY.

Instruction in Astronomy to Engineering students extends through both terms of the Senior year.

It is given by means of recitations, lectures, and the use of text-books and works of reference, globes, charts, etc.

The text-book employed is Norton's *Treatise on Astronomy*. The general course is concluded at the end of the first term. During the second term, instruction in the theory and use of astronomical instruments, in practical astronomy, and in geodesy, is given to the students of civil engineering.

WORKS OF REFERENCE: Woodhouse's, Herschel's, Brunnov's Guillemain's, Loomis' *Practical Astronomies*; American and English *Ephemeris*; Proctor's various *Essays*; Watson's *Chauvenet's*, and Narrien's *Astronomies*; LaPlace's "*Mechanique Celeste*," etc., and Grant's *History of Physical Astronomy*."

ENGLISH.

The study of English follows three lines: 1. The study of the Language, in its history and structure. 2. The study of its Literature. 3. The attainment of skill in its practical use.

The course in each may be outlined as follows:

ENGLISH LANGUAGE.

In the Freshman year, Hadley's "*Brief History of the English Language*" is studied. In the College of Letters, lectures are given on the Indebtedness of English to Latin and Greek.

In the Sophomore year, Earle's "*Philology of the English Tongue*" is studied.

In the Junior year, the students in the literary course commence the study of Anglo-Saxon and comparative philology, in Corson's "*Hand-book of Anglo-Saxon and Early English*," and March's "*Comparative Grammar of Anglo-Saxon*," and "*Anglo-Saxon Reader*."

In the Senior year, the course in the College of Letters includes the study of Whitney's "*Language and the Study of Language*." Accompanying this, a course of lectures on Language is given to the whole class.

ENGLISH LITERATURE.

In the Freshman year, lectures are given on Books and Reading, and the Use of the Library.

In the Sophomore year, Sprague's "*Masterpieces in English Literature*" is studied.

In the Junior year, Arnold's "*Manual of English Literature*" is studied, and in connection with this, in the literary course, Taine's "*History of English Literature*." Special prose authors are also studied by the class individually, with results given in essays and reviews.

In the Senior year, in the first term critical study is given to prose authors; in the second term, to the poets.

Lectures are given on Literature.

ENGLISH COMPOSITION AND RHETORIC.

In the Freshman year Hart's *Rhetoric* and Bain's *Rhetoric* are studied. Compositions are written on descriptive and narrative subjects. Written translations are required in the classical course.

In the Sophomore year Abbott's "*How to Write Clearly*" is studied. Compositions are written and addresses delivered by the students, in exposition and argument.

In the Junior and Senior years practice in composition is continued, in various styles, as well as practice in speaking from notes and without notes. In the literary course special opportunities are given for literary criticism and discussion.

HISTORY AND POLITICAL ECONOMY.

The instruction in History begins with the second term of the Sophomore year, and continues three terms, at the rate of four hours a week. It is addressed to the students of the College of Letters. During the first two terms it is required, but in the third term it is elective. It is the purpose of this course of instruction, in the first term, to give a general knowledge of European history from the establishment of the Roman Empire to the Peace of Westphalia, with a particular account of the development, character, and influence of the Holy Roman Empire; in the second and third terms, to give a view of the growth of the several nations in more recent times, together with a knowledge of the fundamental principles of theoretical politics, and of the history and present status of the political institutions of the most important States.

Instruction is given through text-books and lectures.

The course in Political Economy is continued throughout the Senior year. At first, instruction is given through text-books; afterwards, by lectures, essays, discussions, and criticism.

MODERN LANGUAGES.

No knowledge is required in the modern languages for admission to the University. Students, however, will find it greatly to their advantage to possess some proficiency in one or more of them. The importance of early training in the pronunciation of the spoken languages cannot be too strongly urged.

The study of French or German, at the option of students, is required in all the scientific colleges, commencing with the Freshman year. In the College of Letters, Classical Course, there is the same requirement, commencing with the Sophomore year. Students in the Literary Course of the College of Letters will be required to study both German and French, commencing one of them with the Freshman and the other with the Sophomore year.

In *German*, the following text-books will be used in the order in which they are given here: "A German Course; adapted to the use of Colleges," etc., by G. F. Comfort; Comfort's "German Reader;" Whitney's Grammar, for reference; selections from Goethe, Schiller, Lessing, Uhland, Buerger, Heine, Chamisso, and other prominent German writers.

During the whole course, translations from the English will be required.

Koehler's or Whitney's Dictionary is recommended; any other good work will do.

In *French*, the text-books for this academic year are as follows: Grammars—Otto, Poitevin, and Languellier and Monsanto. For translation—*Histoire du Peuple Française*, par Paul Lacombe; *La Littérature Française Contemporaine*, par Mennechet; *Littérature Française, XVIII^{me} et XIX^{me} siècles*, par J. Demogeot; Corneille—

Le Cid, Cinna; Molière—Le Misanthrope, Les Femmes Savantes; Racine—Athalie, Esther.

Spanish is an optional study for students in the College of Letters, and the course of instruction is so organized as to allow all who wish to have the benefit of instruction without interfering with their obligatory studies. In the Scientific Colleges it is elective from the second term of the Junior year, and optional before that time.

The text-books used are, for beginners: A Practical Course with the Spanish Language, by Monsanto and Languellier. Second Term—Tolou's Spanish Reader; Compendio de la Gramática Castellana, by P. Hernandez. Third Term—Mantilla's Libro 2°; English and Spanish Dictionary, by Velasquez. Fourth Term—Don Quijote, by J. Ticknor. The Grammar of the Spanish Academy, Spanish Composition, and Literature, and free translations from English into Spanish.

LATIN AND GREEK.

For particulars of the course in this department, see the statement under the College of Letters, classical course.

There is a Sub-Latin Class, for the members of the literary course who have not passed the entrance examination of the classical course.

HEBREW, CHALDAIC, AND SYRIAC.

The instruction in these languages is optional, and may be pursued by those students who desire it, at any period during their connection with the University. Classes in Hebrew and Syriac have been formed from each of the four Classes of the University.

MILITARY SCIENCE.

The Congressional enactment of 1862, from which a portion of the University funds was derived, requires instruction in military tactics.

The laws of California also require that the students be organized into a battalion, for military instruction and discipline.

It is expected that every member of the battalion will procure a uniform immediately after his admission.

The course of instruction includes:

I. Tactical instruction in the field and in the class-room, in the schools of the soldier, the company, the battalion, and skirmishers.

II. Lectures on the Art of War. These include the following topics: *Composition and Organization of Armies; Supply of Armies; Moving of Armies; Passage of Rivers; Military Bridges; Field Fortification; Theory of Fire; Principles of Strategy; Historical Sketch of Small Arms.* Also, practice in making out reports, requisitions, etc.

THE SCIENTIFIC DEPARTMENTS,

INCLUDING COLLEGES OF AGRICULTURE, MECHANICS, MINING,
ENGINEERING, CHEMISTRY.

GENERAL STATEMENTS RESPECTING THE SCIENTIFIC COLLEGES.

TERMS OF ADMISSION.

Candidates must pass a satisfactory examination in *Higher Arithmetic*, in all its branches, including the extraction of square and cube roots, and the metric system of weights and measures; *Algebra*, to Quadratic Equations; *Geometry*, the nine books of Davies' Legendre, or their equivalent from another author; *English Grammar*, *Rhetoric*, *Geography*, and *History of the United States*.

In 1880 candidates will be examined in Algebra (Davies' Bourdon or equivalent) as far as the General Theory of Equations.

It is believed that these requirements can be met by a bright and determined scholar residing in any part of the State. The proper text-books are easily procured. The examination is meant to be thorough and strict, but it is not meant to be so technical or exacting as to deter scholars who have not had the best advantages of tuition. Students who show a capacity to pursue with profit the course marked out, are sometimes admitted on condition that they will make up their deficiencies. At the same time, thorough preparation, where it can be had, is of the greatest importance. Parents and teachers are earnestly requested to give good counsel in this respect to those who are coming to the University.

The following suggestions are made for the guidance of those who are able to do more than master the requisites above stated:

Although no requirements in Natural Science are specified, the study of Local Botany, Mineralogy, and Natural History is earnestly recommended, both because of the knowledge which may be acquired, and because of the habits of accurate observation of nature which may thus be formed in early youth.

Students are advised to devote at least one year to the study of Latin before entering this department. It will greatly help their acquisition of Modern Languages, and will be useful in their study of science. Allen & Greenough's Grammar and Reader are especially commended as good manuals for this purpose.

Proficiency in some one or more of the Modern Languages is also very desirable.

FOR ADVANCED STANDING.

Candidates for advanced standing, whether from other colleges or not, in addition to the preparatory studies, are examined in those already pursued by the classes which they propose to enter.

Applicants should be at least sixteen years of age, and bring satisfactory testimonials. Young ladies, as well as young men, are received as students.

Tuition is free to residents of California. Students from other States will be charged a matriculation fee of twenty-five dollars, and a tuition fee of fifty dollars per year, payable in advance, twenty-five dollars at the beginning of each half-year.

OBJECTS.

The various Scientific Colleges of the University are designed to give the student a good introduction to the principles of modern science, together with special instruction in that particular department which he may choose. The law of the State requires the maintenance of five distinct colleges, or courses. These are Agriculture, Mechanics, Mining, Engineering, and Chemistry.

THE FIRST TWO YEARS.

The first two years of instruction, in all these colleges, include very nearly the same studies. A solid foundation is laid for all higher pursuits, by the careful study of mathematics and the elements of chemistry, natural philosophy, physical geography, etc., as well as of English, French, and German. At the beginning of the third year the special subjects begin to predominate.

THE TWO ADVANCED YEARS.

In the two advanced years, the third and fourth of the full course, special attention is given to studies immediately relating to any one of the five colleges which the student may have elected—Agriculture, Mechanics, Mining, Engineering, or Chemistry. General studies receive a subordinate degree of attention.

SPECIAL COURSE STUDENTS.

Students who cannot spend four years at the University, but who are qualified to pursue the special studies here arranged for, are received as "Special Course Students," for a longer or shorter time. This is easier in the Colleges of Agriculture and Chemistry than in the other Colleges, which presuppose a considerable proficiency in mathematics.

COLLEGE OF AGRICULTURE.

GENERAL STATEMENTS.

Terms of Admission.—The terms of admission are the same as to the other Scientific Colleges, and are described on a previous page.

Special Students in Agriculture, not desiring the full course, are received for a longer or shorter period, and may attend only special lectures and recitations and practical exercises, according to their requirements.

Methods of Instruction.—The instruction is given by experimental and illustrated lectures, recitations, essays, and class discussions, and in the practical application of principles upon the University grounds. In addition, orchards, vineyards, farms, dairies, and other places of agricultural interest and importance will be visited by the class, as far as practicable, under the guidance and instruction of the Agricultural Professor.

The University domain is being developed, with a view to illustrate the capability of the State for special cultures, whether of forests, fruits, or field crops, and the most economical methods of production. It will be the station where new plants and processes will be tested, and the result made known to the public. The labor of students is employed and paid for, whenever practicable.

The course of instruction during the first two of the four years constituting the under-graduate course, is the same as for the other Scientific Colleges, except in so far as the work in the chemical laboratory is more especially directed to subjects cognate to Agriculture. During the two succeeding, or Junior and Senior years, the studies relating directly to the science and practice of Agriculture are given chief prominence.

The frequency with which the aim of such studies, and the attainable objects of Agricultural Colleges generally, are misunderstood, renders an explanation desirable. Those who consider Agriculture as consisting merely in the manual work of plowing, planting, cultivating, harvesting, and the care of stock, justly ridicule the idea of its being taught in a college. Apprenticeship on a well-conducted farm, or in labor schools, is the proper means for attaining this end, since it does not necessarily imply material intellectual progress, or education properly so called. It is not contended that such schools, or especially such apprenticeship, are not intrinsically useful and necessary. But the kind of training thus attained is clearly not that intended by the Act of Congress "for the liberal and practical education of the industrial classes," on which the Agricultural and Mechanical Colleges of the several States are based; and experience in the East has abundantly shown that it is not the kind of education really desired by the industrial classes for their sons, since the want of patronage has in every case compelled a change towards the system which makes the manual exercise merely a means of fully illustrating the principles of rational Agriculture. It is not that they may learn to plow or hoe a little better, but to learn why to plow or hoe at all, and when and where to do it to the best advantage, that parents are willing to dispense with their sons' services on the

home farm. Without an educated judgment, directing the application of general principles under circumstances infinitely varied, a little knowledge and a great deal of local routine habit acquired on a model farm, are but too apt to obscure common sense, and to render the possessor eminently unpractical everywhere else. It may be thought that a certain amount of obligatory manual labor, over and above that necessary for practice and illustration, might profitably be enforced in order to maintain the habit. But the period of four years now allotted to the educational course is so short, in regard to the multiplicity of subjects in which an educated agriculturist should have a respectable knowledge, that the time for merely mechanical exercise cannot reasonably be spared. It is considered a hardship by the student, since such labor cannot in any manner constitute a recreation from study; nor, if rendered obligatory beyond the requirement of illustration of principles, is it conducive to maintaining or creating in the student's mind a preference for agricultural pursuits. When such preference is not the result of habits acquired at home, or of natural bias, enforcement of manual labor is not likely to promote its acquisition.

The operations and exercises on the agricultural grounds are intended to subserve two distinct functions. The first is, to serve for the illustration of the course of instruction, and for such practice as is given to chemical students in the laboratory, or to engineering students in field practice. They will show in actual growth and cultivation, so far as possible, all the plants of importance in an agricultural point of view, as well as the operations and implements employed in their culture.

The second and essentially distinct function is the performance of experiments in cultivation, soil improvement, manuring, etc. Such experimental operations, from their very nature, can serve for instruction to a limited extent only; and while of the most direct importance to the practical cultivator, are not necessarily connected with educational institutions, and are, as a rule, quite the reverse of lucrative. Moreover, since soils and climates can neither be artificially made, nor transported, each distinct agricultural region requires, in a measure, its own local experimental station.

The course of instruction by the Professor of Agriculture will hereafter be as follows:

SOPHOMORE YEAR.

First Term.—Structural and Physiological Botany.

Second Term.—Systematic and Economic Botany.

Descriptive Botany, with exercises in the analysis and determination of plants. Excursions will be made occasionally throughout the session, as the seasons may render them profitable.

Economic Botany.—Description of plants useful and injurious to Agriculture, and their varieties.

JUNIOR YEAR.

First Term.—Economic Botany, concluded.

Agricultural Chemistry.

Chemistry of plants and their products. Nutrition of plants from atmospheric sources. Inorganic ingredients of plants, their importance and derivation; ash analysis. Physics of plants; mechanicism

of nutrition and movement of the juices. Germination and development of plants, and accompanying chemical changes.

Second Term.—Agricultural Chemistry (continued).

Chemistry and Physics of soils; their origin, formation, classification. Physical properties, their determination and influence; mechanical analysis. Chemical composition; relation to vegetable nutrition; chemical analysis, its methods, utility, and interpretation.

Policy of Culture and Maintenance of Fertility.—Exhaustion of soils by irrational culture; rotation of crops, green-manuring, fallowing, sub-soiling, thorough-drainage, irrigation; manures, their kinds, preparation, use, and value; the irrational system of culture. General summary.

SENIOR YEAR.

First Term.—Culture.

Agricultural operations and implements, and their application in the cultivation of the several crops. Illustrative exercises in the agricultural grounds, whenever opportunity is afforded. Excursions.

Second Term.—Special Cultures, Stock-breeding, Dairying, etc.

The course of SPECIAL CULTURES will, so far as practicable with the means and appliances at the command of the University, be illustrated by the actual performance, under the eyes of and by the student, of the several operations on the growing crops themselves. Specimen plots of the latter will be kept on the University grounds for this purpose, year after year, whenever the necessary funds are at command. At the same time, class excursions to farms, ranches, and manufactories will at intervals be made, in order to show and discuss operations on a commercial basis, and the local modifications rendered necessary by the consideration of financial success.

It is hoped that hereafter the University will always be enabled to employ for instruction, in these special subjects, persons specially conversant with the best practice, both of California and of other countries.

The following works are required by the student for study and reference, but the instruction in this department will by no means be confined to the text-book, but made as original, and consequently independent thereof, as possible: Gray's Structural and Systematic Botany; Gray's Field and Garden Botany; Botany of California; Allen's American Farm Book; Thomas' "Agricultural Implements;" Johnson's "How Crops Grow" and "How Crops Feed;" Arnold on Dairying; Stewart on Irrigation.

It should be distinctly understood that for those intending to become practical farmers, a "practical course" or period of apprenticeship, on one or several well-conducted farms, subsequent to their course of study in the College of Agriculture, is considered to be as essential as it is in all other professions, all the world over. The requirements of instruction in principles, and those of financial success, are as a rule incompatible; and the attempt to force them upon the student's mind simultaneously, usually results in a confusion of theory and practice, which forms a serious impediment to success in life. But a knowledge of the principles upon which it is based, renders the acquisition of practice easy, pleasant, and interesting, and at once relieves manual labor from the reproach of being mere drudgery, which so often repels our youth from the pursuit of agriculture.

In addition to the main library of the University, which contains some fourteen thousand volumes, and which is open during fixed

hours to the students of all the Colleges, the Agricultural College has a special and select library of several hundred volumes, which relate directly to farm life and labor.

Most of the recent American books on Scientific Agriculture have been placed in the Agricultural Library, so as to be accessible to students, for reference.

The leading agricultural journals of the United States, as well as those of California, can be found in the general library.

In the Museum, which is now being arranged as rapidly as the finances of the University will permit, specimens of the botany of the State, and of many indigenous and exotic woods, can be examined by the students; and the private collection of Professor Hilgard, containing some twelve thousand specimens of American and foreign plants, which are arranged and classified expressly for purposes of instruction and investigation, is deposited in the lecture-room of this College, for the use of the students.

A cabinet of the soils, agricultural products, and manufactures of the State is being formed, and already contains numerous specimens.

The University also possesses the large collection of plants, rocks, etc., of the State Geological Survey, making, with the foregoing, an unusually extensive series of specimens for study.

The agricultural grounds of the University site will be fully prepared and occupied for purposes of experiment, instruction, and illustration, as rapidly as the financial resources of the institution will permit. A standard orchard of over six hundred varieties, planted in 1874-5, is now coming into bearing. About thirteen acres of ground have for the past three years been occupied for culture experiments, and with the aid of the funds provided for the purpose by the last Legislature, a portion of this tract is now being prepared as a Garden of Economic Plants, which will thus be shown to the student in actual growth. A garden of general botany will also be laid out so soon as the stock can be prepared, for which purpose, as well as for that of the ornamentation of the grounds, there are two Propagating Houses, with other needful buildings; also a convenient barn and appurtenances.

Realizing the fact that in order to give instruction of a truly practical character, Agricultural Colleges should be able to teach the students not only what should be done in certain supposititious cases, but also what, in fact and practice, they will have to do under the circumstances actually existing in their own State, the Regents, on the recommendation of Professor Hilgard, have made an appropriation, and authorized the appointment of an assistant analytical chemist, with a view towards the inauguration of a system of thorough investigation of the agricultural and industrial resources of the State, or what might be termed an Industrial Survey. Such a work is the needful complement of the Geological and Topographical Survey heretofore made, which forms its necessary basis, the results of which it will utilize and expand, and render practically available to the people of the State, by direct applications to every-day life.

The possession of the collections of the State Geological Survey is of especial importance and advantage in this connection.

In carrying out the portion of the work more directly related to Agriculture—the investigation of soils and of their relations and adaptation to crops—the plan will be to obtain, first, a full knowledge of the occurrence, location, extent, natural peculiarities, and

climatic position of each prominent variety of soil, by examination in the field; and at the same time to elicit by inquiry from those cultivating it, whatever of information or experience they may possess as to the soil's merits, demerits, peculiarities, or adaptations; thus gaining suggestions, as to the most immediately important points to be investigated. Specimens of the soils, carefully taken to secure representative samples, will then be subjected to such examination, mechanical and chemical analysis, etc., as may be seen advisable in each case. The results of these investigations, with suggestions as to the soil's treatment and adaptation in culture, may then be published and subjected to the practical trial which must form the final test in questions of this nature.

So far as practicable, such tests, as well as experiments of a general nature relating to culture, manures, etc., will be conducted on the University grounds. But since it is impossible to realize in any one locality the conditions of soil, climate, etc., which govern the practical application of the results of the investigations proposed, such tests should most properly be made at local experiment stations, established for the purpose in each agricultural subdivision, as is done in Europe, as well as in some of the Eastern States. But Agricultural Societies, as well as intelligent individuals, may largely replace such stations for the present; and the coöperation of societies and individuals willing to aid in this work is most earnestly invoked and invited.

The knowledge thus obtained of the State's agricultural features—the kind, distribution, and adaptation of the soils, their modes of treatment and means of improvement—will not only enable the farmers to purchase and cultivate more intelligently and profitably; but it will render possible the publication of an authentic and accurate description of the State, conveying the information wanted by every immigrant, and the best possible advertisement of its industrial advantages. The students of the Agricultural College will then go out with definite foreknowledge of what they will have to deal with in actual life, and prepared to turn the knowledge acquired to direct account.

Communications, inquiries, specimens, etc., relating to Agriculture or cognate subjects, addressed to Professor Hilgard, will receive prompt attention and answer, so far as is practicable without the data to be supplied by the Agricultural Survey.

SCHEDULE OF STUDIES.

FOURTH, OR FRESHMAN CLASS.

First Term.—Mathematics—Algebra; French or German—(Begun); Rhetoric; English Composition; Drawing—Free-hand; Spanish—(Optional through the year).

Second Term.—Mathematics—Geometry; Chemistry—(Recitations and laboratory practice); French or German; English Composition; English—History of the Language; Drawing—Free-hand.

THIRD, OR SOPHOMORE CLASS.

First Term.—Mathematics—Trigonometry, Plane and Spherical; Analytical Geometry; Chemistry—(Recitations and laboratory practice); Physics—Heat; Structural and Physiological Botany; French

or German; English Composition; Drawing—Industrial; Spanish—(Optional through the year).

Second Term.—Mathematics—Analytical Geometry completed; Chemistry—(Qualitative Analysis); Land Surveying and Leveling; Physics; Botany—Systematic and Economic; French or German; History—(Optional); Drawing—Industrial.

SECOND, OR JUNIOR CLASS.

First Term.—Economic Botany—Concluded; Agriculture—Chemistry of Plants, and their Products; Inorganic Chemistry—Lectures; Analytical Chemistry—(Qualitative and Quantitative); Mechanics; Zoology; German or French; History—(Optional).

Second Term.—Agriculture—Chemistry and Physics of Soils; Policy of Culture; Maintenance of Fertility; Inorganic Chemistry—Lectures; Analytical Chemistry—(Quantitative); Physics; Zoology; German, French, or Spanish—(Elective); History of English Literature—(Elective).

FIRST, OR SENIOR CLASS.

First Term.—Agricultural Operations and Implements; Organic Chemistry—Lectures; Analytical Chemistry—(Quantitative); Physics—(Elective); Geology; Astronomy—(Elective); Political Economy.

Second Term.—Agriculture—Special Cultures, Stock-breeding, Dairying, etc.; Organic Chemistry—Lectures; Analytical Chemistry—Analysis of Soils, Manures, etc.; Physics—(Optional); Geology; Thesis—(Preparatory to graduation).

COLLEGE OF MECHANICS.

GENERAL STATEMENTS.

Terms of Admission.—These are stated on a previous page.

Objects of this Course.—This College will educate mechanical engineers, machinists (so far as they are constructors of machinery), and others who wish to devote their energies to such technical and industrial pursuits as involve a knowledge of machinery.

Course of Study.—The full course of study of four years includes, like the other Scientific Colleges, two preliminary years, which give a general literary culture, besides the requisite mathematics.

The two advanced years give as much of the Civil Engineering Course as may be found necessary for the purposes of this College, including Mathematics, Physics, and Theoretical Mechanics. But the chief object will be to teach Applied or Industrial Mechanics; to show how the forces of nature are employed for industrial purposes; and to discuss the nature of the different constructions or machines contrived by human ingenuity.

Special attention is given to Industrial Drawing. The instruction in this department will be directed, in the advanced years, to the construction of machinery as the principal object, and will advance as the instruction in Applied or Industrial Mechanics advances.

Special Instruction in Applied Mechanics.—The Course of Applied or

Industrial Mechanics during the third and fourth years will be as follows:

THIRD YEAR.

1. *Statics of Solids*: general principles of statics; center of gravity; equilibrium of restrained bodies (elastic and rigid); friction and rigidity of chords; application of the principles of statics to resistance of material; neutral surface of a deflected beam; shearing and torsional resistance; strength of pillars; compound resistance.

2. *Dynamics of Solids*: moment of inertia; centrifugal force; restrained motion under the influence of gravity; impact.

3. *Statics of Fluids*: equilibrium and pressure of liquids; buoyancy; molecular action of water; equilibrium and pressure of air.

4. *Dynamics of Fluids*: general principles of discharge; influence of contraction and friction; flow through pipes; influence of sudden change in cross section; discharge under variable pressure; discharge and flow of air; motion of fluids of varying density; reaction and impact.

5. Application of mechanics to statical structures, with special reference to the construction of machines.

FOURTH YEAR.

General introduction to the application of mechanics, power, useful effect, work.

Prime Movers: recipients for animal power, and that of water and wind; dynamometers; animal power; application of hydraulics to the reception and discharge of water (as used for water-power); vertical water-wheels; horizontal wheels (turbines); water-pressure engines; wind-mills.

Heat, Steam, and Steam-engines: mechanical equivalent of heat; properties of steam, and appliances for its generation; steam-engines; heat engines in general, and their efficiency.

Elementary Forms of Mechanism: general principles; interposed mechanism or communicators; wheel work, producing motion by rolling and wrapping contact; mechanism for modifying motion; screw; cam; producing motion by sliding contact; unusual means employed for modifying motion; variable motion by rolling contact; regulators and accumulators of motion.

Working Machines—1. Hoisting and transportation: lifting jacks, hydraulic press, hoists, hydraulic hoists, cranes, pile engine; application of hoisting machinery in mining; means employed for raising water.

2. Transmission of air by heat, compression or expansion, inertia and water.

3. Machines employed for change of form: stamp mills, steam and tilt hammers, and so forth.

4. Machines used in the arts of construction and for domestic purposes; excavator, dredging, drilling and punching machines, saw-mills, riveting machines, and so forth.

BOOKS RECOMMENDED FOR REFERENCE: Rankine's Manual of Applied Mechanics, and Weisbach's Mechanics.

SCHEDULE OF STUDIES.

FOURTH, OR FRESHMAN CLASS.

First Term.—Mathematics—Algebra; French or German—(Begun); Rhetoric; English Composition; Drawing—Free-hand; Spanish—(Optional through the year).

Second Term.—Mathematics—Geometry; Chemistry—(Recitations and laboratory practice); French or German; English Composition; English—History of the Language; Drawing—Free-hand.

THIRD, OR SOPHOMORE CLASS.

First Term.—Mathematics—Trigonometry, Plane and Spherical; Descriptive Geometry; Chemistry; Physics—Heat; Botany; French or German; English Composition; Drawing—Industrial; Spanish—(Optional through the year).

Second Term.—Mathematics—Descriptive Geometry (Shades, Shad-ows, Linear Perspective, Isometric Projection); Analytical Geometry; Land Surveying and Leveling; Chemistry; Physics; French or Ger-man; History—(Optional); Drawing—Industrial.

SECOND, OR JUNIOR CLASS.

First Term.—Theoretical and Applied Mechanics—Lectures and Exercises; Mechanics; Zoology; Differential and Integral Calculus; German or French; History—(Optional); Drawing—Industrial; Spanish—(Optional).

Second Term.—Theoretical and Applied Mechanics—(Continued); Mechanics; Zoology—(Elective); Integral Calculus and Calculus of Variations; German, French, or Spanish—(Elective); Drawing—Industrial.

FIRST, OR SENIOR CLASS.

First Term.—Theoretical and Applied Mechanics—Lectures and Exercises; Astronomy; Physics; Geology; Political Economy; Draw-ing—Industrial.

Second Term.—Theoretical and Applied Mechanics—(Continued); Physics; Geology; Law—Lectures—(Optional); Drawing—Industrial; Thesis—(Preparatory to graduation).

COLLEGE OF MINING.

GENERAL STATEMENTS.

Terms of Admission.—The requirements are the same as for the other Scientific Colleges, and are stated on a previous page.

Course of Instruction.—The four years' course of instruction leads to the degree of Bachelor of Philosophy. Students who desire to receive the degree of Mining Engineer must continue their studies for at least two years more, and must exhibit to the Faculty satisfactory evidence of their power to apply in actual work the knowledge they have acquired.

During the first two years of under-graduate work, the studies of

the course are the same as those of the other Scientific Colleges in the University of California. During the last two years the attention is directed chiefly to Chemistry, Metallurgy, Mining, Geology, Mineralogy, and Mechanical and Civil Engineering, though the study of modern languages is also kept up. The scientific studies are taught, as far as possible, with reference to their applications in mining, and the entire work of the last two under-graduate years and the post-graduate course is overlooked by the Lecturer on Metallurgy and Mining, under whose special guidance the mining students come.

The post-graduate years are devoted mainly to the study of Mining and Metallurgy, including studies on the spot of mines and smelting-works, and essays embodying the results of observation.

Opportunities will be afforded to the class to visit some of the industrial establishments of San Francisco, and they will be encouraged to extend their visits to mining and metallurgical works at a distance.

Collections and Laboratories.—The laboratories for work in chemistry are new, extensive, and well furnished. They afford excellent opportunities for becoming proficient in Analytical Chemistry.

A Metallurgical Laboratory, designed to offer the very best facilities for the study of assaying, and to contain machinery and other appliances for the study of metallurgical processes, has been built during the past year. Its equipment will be commenced immediately.

The engineering instruments and the physical apparatus are also of the best kind.

There is a collection of beautiful models of furnaces, as well as one of furnace products.

The collection of Ores, Fossils, and Minerals are remarkable, including:

1. The materials of the Geological Survey of California, brought together by Professor J. D. Whitney, State Geologist.
2. The valuable mineralogical collection of Mr. H. G. Hanks, given to the University by Mr. James R. Keene.
3. The collection of ores, rocks, fossils, etc., collected by Mr. C. D. Voy, and presented by Mr. D. O. Mills.
4. The cabinet of the late Mr. F. L. A. Pioche.
5. The numerous gifts of other individuals.

The University also owns a large collection of the Ward Geological Casts.

SCHEDULE OF STUDIES.

FOURTH, OR FRESHMAN CLASS.

First Term.—Mathematics—Algebra; French or German—(Begun); Rhetoric; English Composition; Drawing—Free-hand; Spanish—(Optional through the course).

Second Term.—Mathematics—Geometry; Chemistry—(Recitations and laboratory practice); French or German; English Composition; English—History of the Language; Drawing—Free-hand.

THIRD, OR SOPHOMORE CLASS.

First Term.—Mathematics—Trigonometry, Plane and Spherical; Descriptive Geometry; Chemistry; Physics—Heat; Botany; French or German; English Composition; Drawing—Industrial.

Second Term.—Mathematics—Descriptive Geometry (Shades, Shadows, Linear Perspective, Isometric Projection); Analytical Geometry; Chemistry; Physics; French or German; History; Drawing—Industrial.

SECOND, OR JUNIOR CLASS.

First Term.—Mineralogy; Land and Mine Surveying and Leveling; Field Practice; Differential and Integral Calculus; Chemistry; Analytical Chemistry; Mechanics; German or French; Drawing—Industrial.

Second Term.—Mineralogy; Land and Mine Surveying and Leveling; Field Practice; Integral Calculus and Calculus of Variations; Chemistry; Analytical Chemistry; Mechanics; German or French—(Optional).

FIRST, OR SENIOR CLASS.

First Term.—Metallurgy; Mineralogy; Analytical Chemistry and Laboratory Work; Astronomy; Physics; Geology; Political Economy.

Second Term.—Mining; Mineralogy; Analytical Chemistry and Laboratory Work; Physics; Geology; Law—Lectures—(Optional); Thesis—(Preparatory to graduation).

COLLEGE OF ENGINEERING.

SPECIAL STATEMENTS.

Terms of Admission.—These are given on a previous page.

Objects of the College.—The object of this College is to give thorough instruction in those studies which pertain to the profession of a Civil Engineer. To a very considerable extent, these studies are likewise preliminary to the profession of an Architect. They are also serviceable to all who wish proficiency in the application of Mathematics and Physics, either with reference to teaching or to other pursuits.

The Course of Study.—The full course of study includes two preliminary years, in which are given not only the requisite mathematics, but many branches of general literary culture, the same as in the other Scientific Colleges; and also, two advanced years in which the engineering and mathematical studies predominate. In the advanced years, instruction is also given to the students of this College in Physics, Geology, Zoology, and in certain literary branches, including Modern Languages, and Political Economy, with the intention of promoting, so far as can be done in the limited time, professional excellence and intellectual culture.

Special Instruction in Engineering begins with the Surveying Course, including Land Surveying, Leveling, Topographical Surveying, Use of the Plane-table, Road and Railroad Surveying and Construction, with computations of earth-work required by excavations, tunnels, and embankments. A liberal amount of time is allotted to practice in the field, and to the use of instruments, such as the compass, level,

field transit, plane-table, etc., and in the working up and plotting of field notes. Topographical drawing and map-making are taught in connection with this part of the course. During the present year an accurate topographical survey has been made, by the class, of the grounds immediately surrounding the University buildings. This will be mapped by them, and the work continued by successive classes till the entire tract is accurately plotted. The use of the Aneroid and Mercurial Barometers is taught, and practice given in the determination of heights, etc.

Journeys over the adjacent roads are made for the purpose of constructing itineraries, and of measuring and estimating distances by the eye alone, or with the ordinarily available means of assistance. Sketches will be made of the surrounding country, and directions of hill ranges, streams, etc., will be taken as the basis of reconnoissance maps.

Students proficient in this course will be well fitted to undertake the work of the Field Engineer.

In the fourth year of the course, the characteristics and properties of the various building materials, wood, stone, iron, steel, mortar, mastic, etc., their strength, uses, and different methods of employment in structures, are discussed. The rules governing the construction of works of masonry, including foundations in dry and wet soils, and under water, stone bridges, dams, sewers, culverts, and retaining walls, are acquired.

Problems, relating to the more difficult constructions of masonry, such as groined, cloistered, askew and rampant arches, domes and walls bounded by warped surfaces, etc., are solved, and by means of them working plans are drawn.

The principles and practice of framing, bridge and truss building, and the construction of estimates and working plans, are investigated; and the preparation of a careful thesis, on some topic in Engineering, selected or approved by the Professor of Engineering, terminates the under-graduate course, leading to the Degree of Bachelor of Philosophy (Ph. B.).

A practical bearing is given to the instruction of this year by the solution of interesting problems, connected with the subjects taught; and by visits to important structures, completed or in process of construction, which are accessible.

The text-books used are Gillespie's Surveying; Gilmore's Roads, Streets, and Pavements; Henk's Field Book; Wood's Resistance of Materials, and Bridges and Roofs. A course of lectures is given upon various engineering topics.

For reference, "Simm's Instruments," Frome's Trigonometrical Surveying, Reports of the United States Coast Survey, Reports of the United States Engineer Corps, their professional papers, etc., "The Plane-table," as used by the United States Coast Survey; Smith's and Enthoffer's Topographical Drawing; Rankine's Civil Engineering, and Applied Mechanics; Weisbach's Mechanics of Engineering; Moseley's Mechanics of Engineering, are recommended. A short course in surveying, leveling, etc., is given each year to students not in the College of Engineering.

A post-graduate course of two years' length, embracing the higher subjects of engineering study, leads to the degree of Civil Engineer (C. E.).

A valuable collection of surveying instruments, including rods,

steel tapes, chains, hand and Y levels, theodolites, transits, solar and surveyor's compasses, plane-table, etc., is in the possession of this department. There is an excellent assortment of models in wood of the various bonds of masonry and of different walls, arches, gateways, etc. Also, models in joints and fastenings in carpentry and framework; bridge and roof trusses; diagrams of various European and American engineering structures; the hypsometrical and surveying apparatus formerly belonging to the California Geological Survey.

The beautiful varied nature of the grounds at and about the University affords the finest field for practice in the various kinds of surveying; the department is well supplied with the necessary instruments, models, drawings, and maps, used in such instruction, and will avail itself of a generous gift from a citizen of Oakland, to further increase its collection.

Visits to Places and Objects of Special Interest to Engineers.—It is the intention of the Professor of Engineering, from time to time, as opportunity offers, to accompany his classes to places and objects of special interest to Engineers. Among the works visited, or to be visited, are the following:

The fortifications of earth-work and of masonry in or near San Francisco Harbor.

The shops for preparing artificial stone.

The wood-preserving works.

Rolling-mills and foundries.

Offices of Civil and Military Engineers.

United States Government buildings in San Francisco.

California Dry Dock.

United States Navy Yard at Mare Island.

Macadam and other roads in process of construction, stone quarries, and stone-breaking machines.

Golden Gate Park.

Spring Valley Water-works and reservoirs.

Acknowledgments from the University are due to the officers and superintendents of the above places, for their kindness and politeness in admitting students, and describing and explaining to them the various objects and processes seen.

SCHEDULE OF STUDIES.

FOURTH, OR FRESHMAN CLASS.

First Term.—Mathematics—Algebra; French or German—(Begun); Rhetoric; English Composition; Drawing—Free-hand; Spanish—(Optional through the year).

Second Term.—Mathematics—Geometry; Chemistry—(Recitations and laboratory practice); French or German; English Composition; English—History of the Language; Drawing—Free-hand.

THIRD, OR SOPHOMORE CLASS.

First Term.—Mathematics—Trigonometry, Plane and Spherical; Descriptive Geometry; Chemistry; Physics—Heat; Botany; French or German; English Composition; Drawing—Industrial; Spanish—(Optional through the year).

Second Term.—Mathematics—Descriptive Geometry (Shades, Shad-

ows, Linear Perspective, Isometric Projection); Analytical Geometry; Physics; French or German; History; Drawing—Industrial.

SECOND, OR JUNIOR CLASS.

First Term.—Land Surveying, Leveling, Topography, and Use of Plane-table—Field Practice; Engineering Drawing; Mechanics; Zoology; Differential and Integral Calculus; German or French; History—(Optional); Spanish—(Optional).

Second Term.—Road and Railroad Surveying and Building—Geodesy and Reconnoissances; Computations of Earth-work; Field Practice; Engineering Drawing; Mechanics; Zoology—(Elective); Integral Calculus and Calculus of Variations; German, French, or Spanish—(Elective).

FIRST, OR SENIOR CLASS.

First Term.—Properties of Building Materials; Engineering Drawing; Astronomy—Use of Solar Compass; Physics; Geology; Political Economy.

Second Term.—Framing, Bridge Building, and Foundations; Engineering Drawing; Practical Astronomy; Physics; Law—Lectures—(Optional); Thesis—(Preparatory to graduation).

COLLEGE OF CHEMISTRY.

SPECIAL STATEMENTS.

Terms of Admission.—The requirements are stated on a previous page.

Objects of this College.—The course of instruction in the College of Chemistry is designed for those who wish to become professional chemists, either as teachers and investigators, or as metallurgists, assayers, and manufacturers in chemical industries; and also for those who wish to become expert chemists preparatory to the pursuit of medicine, pharmacy, mining, etc.

The students of the Colleges of Agriculture, Mining, etc., have also the advantages of the chemical laboratory, but give a less amount of time to laboratory work than those who are especially enrolled in the College of Chemistry. Elementary instruction is also given to students of the College of Letters.

The Course of Study.—The full course of study of four years includes the same preliminary instructions as are given in the other Scientific Colleges, except that in the third term of the second year the student may take Surveying or Crystallography in place of Descriptive Geometry. It includes, also, during the third and fourth years, instructions in Mineralogy, Physics, Geology, Zoology, and in certain literary branches, including Modern Languages and Political Economy.

The special teaching in Chemistry may be thus described: Instruction is given in General and Theoretical Chemistry by lectures, recitations, and laboratory practice. This course extends through three terms—one in the Freshman year and two in the Sophomore year, and embraces the elements of Inorganic and Organic

Chemistry. Students, after making themselves familiar with the details of experiments, are required to repeat the same in the laboratory for Elementary Chemistry.

An advanced course of lectures will be given to students of the Junior and Senior Classes in General and Theoretical Chemistry. This course will embrace a discussion of the general principles of the science, and their application to Analytical and Metallurgical Chemistry, and to Mineralogy.

The chemical laboratories will be open daily for instruction in Analytical Chemistry.

The course of instruction in qualitative analysis will include the analysis of simple and complex substances in the wet way, their analysis by the use of the blow-pipe and flame reactions, and the determination of minerals by the blow-pipe. Students will be required to keep a careful record of their work, and to submit the same to the inspection of the Professor. Upon passing a satisfactory examination in qualitative analysis, students may pass to the quantitative laboratory.

In the quantitative laboratory instruction will be given in the quantitative gravimetric analysis of simple and complex salts, minerals, ashes of plants, mineral waters, etc.; in volumetric analysis, including acidimetry, alkadimetry, chlorimetry, etc.; in organic analysis; in gas analysis; in the preparation from inorganic and organic compounds, and in the carrying out of original investigation.

Students taking the course of Chemistry will be expected to spend at least fifteen hours a week in the laboratory during the Junior year, and twenty hours a week during the Senior year.

Every opportunity possible is made use of to give instruction in those branches of Chemistry which have a practical application to the arts. For example: a room for the study of photography, in connection with the chemical laboratory, will be opened as soon as the necessary apparatus can be supplied.

Practical instruction in electro-metallurgy will be given to such students as desire it.

Students in agriculture will receive special instruction in the analysis of manures, including the determination of phosphoric acid and nitrogen, etc.

So far as practicable, students will be employed in the preparation of chemicals used in the laboratories, the object being to give them as much practice in Manufacturing Chemistry as is possible.

Special training in the analysis of mineral waters will be given to such of the advanced students in Chemistry as may desire it.

Careful lists of waste products, minerals, etc., which may be utilized, will be kept, and students instructed in methods of saving them.

Special Students in Chemistry.—The advantages of the laboratory and lectures are open not only to those who pursue a full course of instruction, but to those who wish for a short period to pursue some special course, or carry on some special investigation. It should, however, be understood that this permission is not designed to furnish a means of escape from regular courses of study, but is for the benefit of persons who are already somewhat advanced in knowledge, and who desire to become acquainted with modern Chemistry.

Visits to Chemical Establishments.—It is the intention of the Professor of Chemistry to encourage the students to visit the various

chemical and metallurgical works of the vicinity, so far as this is practicable.

The Chemical Laboratory.—The chemical laboratory, at Berkeley, has been fitted up at a large expense, and in accordance with the best experience of European and American laboratories. There are two main rooms—an upper and a lower room. The former is intended for quantitative analysis and original investigations, and has accommodations for thirty-two students. Adjacent to it are the laboratory and study of the Professor of Chemistry, the balance-room, and fusion-room. The lower room is intended for qualitative analysis, and has also accommodations for thirty-two students. Adjacent to it is a room for the instruction of literary and other students in Elementary Chemistry. The laboratories are open daily, including Saturdays.

Charges for Chemicals.—Students may be supplied with the necessary apparatus for chemical analysis from the laboratory. This will be charged to them, and may be returned to the laboratory if uninjured. Students will provide themselves with platinum ware and weights.

A charge of fifteen dollars a term will be made for chemicals used in chemical analysis. Students needing assistance, who are able and willing to render service in return for chemicals, may make application to the Professor.

SCHEDULE OF STUDIES.

FOURTH, OR FRESHMAN CLASS.

First Term.—Mathematics—Algebra; French or German—(Begun); Rhetoric; English Composition; Drawing—Free-hand; Spanish—(Optional through the year).

Second Term.—Mathematics—Geometry; Chemistry—(Recitations and laboratory practice); French or German; English Composition; English—History of the Language; Drawing—Free-hand.

THIRD, OR SOPHOMORE CLASS.

First Term.—Mathematics—Trigonometry, Plane and Spherical; Analytical Geometry; Chemistry; Physics—Heat; Botany; French or German; English Composition; Drawing—Industrial; Spanish—(Optional through the year).

Second Term.—Mathematics—Analytical Geometry; Land Surveying and Leveling; Chemistry—(Qualitative Analysis); Physics; Botany—(Elective); French or German; History—(Elective); Drawing—Industrial.

SECOND, OR JUNIOR CLASS.

First Term.—Inorganic Chemistry—Lectures; Analytical Chemistry; Mineralogy; Mechanics; Zoology; German or French; History—(Optional); Spanish—(Optional).

Second Term.—Inorganic Chemistry—Lectures; Analytical Chemistry; Mineralogy; Mechanics; Zoology—(Elective); French, German, or Spanish—(Elective).

FIRST, OR SENIOR CLASS.

First Term.—Organic Chemistry—Lectures; Analytical Chemistry; Mineralogy—Laboratory practice; Physics; Geology; Astronomy—(Elective); Metallurgy—(Elective); Political Economy.

Second Term.—Organic Chemistry—Lectures; Analytical Chemistry; Mineralogy—Laboratory practice; Physics; Geology; Law—Lectures—(Optional); Thesis—(Preparatory to graduation).

COLLEGE OF LETTERS.

SPECIAL STATEMENTS.

Objects.—The College of Letters maintains two courses: one of them corresponding to the classical course, with which the public are familiar; and the other giving prominence to the Modern Languages, History, and Literature. The former, which is known as "the Classical Course," leads to the traditional degree of Bachelor of Arts; the latter, which is known as "the Literary Course," leads to the degree of Bachelor of Philosophy. In both these courses a liberal amount of time is bestowed upon the principles of modern science.

One or the other of these two courses will be found adapted to those who desire to lay a broad foundation of literary, historical, and scientific culture as a basis for further professional study. Those who expect to become teachers will notice the adaptation of these courses to their future vocation.

TERMS OF ADMISSION.

(1) *Classical Course.*—Candidates must pass a satisfactory examination in Higher Arithmetic; Algebra, to Quadratic Equations; Geometry, first four books (Davies' Legendre or Loomis'); English Grammar; Rhetoric; Geography; History of the United States; Latin Grammar, including prosody; Caesar, four books; Virgil, Eclogues, Georgics, and six books of the *Aeneid*; Cicero, six orations; Greek Grammar, including prosody; Xenophon's *Anabasis*, four books; Homer's *Iliad*, two books (omitting the catalogue). For the *Anabasis* equivalents will be accepted from Goodwin's Greek Reader.

Candidates will also be examined in the first forty-five pages of Allen & Greenough's Latin Composition, and in Jones' Greek Composition, or in their equivalents; also, in Greek and Roman History.

(2) *Literary Course.*—Candidates must pass a satisfactory examination in Higher Arithmetic; Algebra, to Quadratic Equations; Geometry, first four books (Davies' Legendre or Loomis'); English Grammar; Rhetoric; Geography; History of the United States; in the Latin Grammar and Reader; four books of Caesar; and in Greek and Roman History. It is desirable, also, to possess an elementary acquaintance with some modern language. As a test of proficiency in practical grammar and composition, each applicant will be required to write a short English exercise, which he must be able to analyze and parse.

By the term Rhetoric is meant the study of Rhetoric and Practical Composition as commonly treated in such elementary text-books as Hart's "Manual of Composition and Rhetoric;" covering such subjects as Punctuation, Diction, the Properties of Style, Figures of

Speech, Versification, and especially the practice of Prose Composition.

The knowledge required of Ancient History is such as may be obtained from Smith's "Smaller History of Greece," and "Smaller History of Rome."

THE CLASSICAL COURSE.

Outline of the Course.—An outline of the course may thus be given:

In Latin, the authors read are: Livy (History), Horace (Odes, Epistles, and Satires), Cicero (on Old Age, on Oratory, the Oration for Cluentius, Tusculan Disputations), Plautus (Captives), Terence (Andria), Tacitus (Histories), Pliny (Epistles), Juvenal (Satires), Quintillian (on Oratory), Lucretius (on the Nature of Things), and Catullus (Poems).

In Greek, the student will read: Homer (Odyssey), Herodotus, Eschylus (Prometheus), Sophocles (Antigone), Euripides (Alcestis), Plato (Gorgias, Apology, Crito, and Phædo), Xenophon (Memorabilia), Thucydides, Demosthenes (Oration on the Crown, and Select Orations), Lysias (Select Orations), Aristophanes (Clouds, Frogs, or Birds).

Professor Kellogg gives the following courses of lectures:

On the Geography of the Roman Empire (Freshman year);

On Roman Archæology (Sophomore year);

On Roman Literature (Junior year);

On Comparative Philology (Senior year).

Professor Bunnell lectures to the Junior Class on Grecian Antiquities. This course of lectures includes the Archæology of Literature, Art, etc.

To the Senior Class he lectures on Greek Literature and Philosophy; also on Greek Law and Politics.

In Latin, the grammars of Allen & Greenough and of Harkness are used, with references to Madvig's. The first-named is recommended to beginners. Hadley's Greek Grammar and Goodwin's Greek Grammar are used. The latter is recommended to preparatory classes. Liddell & Scott's Greek Lexicon and Andrews' or White's Latin Lexicon are also recommended.

All the instruction in Latin and Greek aims to bring out the relations of those languages to our own.

Prominence is given in the classical course to such works, prospective or illustrative, as bear on the art of public speaking.

Latin and Greek prose composition receive attention during the first two years.

Other studies are: Ancient and Modern History, the English Language, with constant practice in Composition, English Literature, Rhetoric, Logic, Mental and Moral Philosophy, German, and French.

Students in this course pursue the study of Mathematics through Algebra, Geometry, Analytical Geometry, Surveying, and Mechanics.

In science, they pursue the study of Physics, Botany, Zoology, Geology, Chemistry, Mineralogy, and Astronomy.

In addition to the courses of lectures specified above, there are courses on English Literature, Political Economy, and Law.

SCHEDULE OF STUDIES.

FOURTH, OR FRESHMAN CLASS.

First Term.—Livy (one Book); Cicero, De Senectute; Latin Composition; Greek—Homer, Odyssey; Herodotus; Xenophon; Memorabilia; Mathematics—Algebra; Rhetoric; Written Translations; Geography of the Roman Empire—Lectures; Spanish and Hebrew—(Optional through the course).

Second Term.—Latin—Horace, Odes, Epistles and Ars Poetica; Latin Composition; Greek—Plato, Phædo; Demosthenes; Third Olynthiac; Thucydides; Mathematics—Algebra, completed; Geometry; English Language—Hadley; English Composition.

THIRD, OR SOPHOMORE CLASS.

First Term.—Latin—Tacitus, Histories; Pliny, Epistles; Latin Composition; Greek—Plato, Apology and Crito; Greek Composition; French or German; English Language—Earle's Philology; English Composition; Mathematics—Trigonometry, Plane and Spherical; Analytical Geometry; Roman Archaeology—Lectures.

Second Term.—Latin—Terence, Andria; Plautus, Captives; Greek—Æschylus, Prometheus; Euripides, Alcestitis; French or German; History; English Composition; Mathematics—Analytical Geometry; Surveying.

SECOND, OR JUNIOR CLASS.

First Term.—Latin—Cicero and Quintilian, in Kellogg's "Ars Oratoria;" Greek—Sophocles, Antigone; Lysias, Select Oration; French or German; History of English Literature—(Elective); English Composition—(Elective); History; Anglo-Saxon—(Elective); Zoology—(Elective); Chemistry—Lectures; Grecian Antiquities—Lectures—(Elective).

Second Term.—Latin—Juvenal; Horace, Satires; Greek—Plato, Gorgias; French or German; History of English Literature—(Elective); English Composition—(Elective); History—(Elective); Anglo-Saxon—(Elective); Physics; Zoology—(Elective); Roman Literature—Lectures—(Elective); Grecian Antiquities—Lectures—(Elective).

FIRST, OR SENIOR CLASS.

First Term.—Latin—Cicero, Pro Cluentio, or Tusculan Disputations—(Elective); Greek—Demosthenes, Oration on the Crown—(Elective); French or German—(Elective); English—Select Prose—(Elective); English Composition—(Elective); Moral Philosophy—Lectures; Political Economy; Physics; Geology; Astronomy—(Elective); Greek Literature and Philosophy—Lectures—(Elective); Comparative Philology—Lectures—(Elective).

Second Term.—Latin—Lucretius; Catullus—(Elective); Greek—Aristophanes, Frogs, Clouds, or Birds—(Elective); German or French—(Elective); Linguistics—Whitney's Language and the Study of Language; English—Select Poetry—(Elective); English Composition—(Elective); Political Economy—Lectures and Discussions—(Elective); Physics; Geology; Law—Lectures—(Optional); Greek Law and Politics—Lectures—(Elective); Thesis—(Preparatory to graduation).

THE LITERARY COURSE.

Terms of Admission.—These are stated on a previous page.

Outline of the Course.—The History and Structure of the English Language are studied in the first two years. The critical study of Masterpieces in English Literature is begun. Rhetoric is studied. Compositions are written. Ancient History is pursued in the first year, and General History is begun. French or German is studied in the first year, and both languages in the second year. Latin is studied in the first two years, and is elective the third year. Advanced Latin, taken with the Classical Students, is accepted as an equivalent for one of the modern languages. Chemistry is studied in the second year, and continued as an elective. Algebra, Geometry, Trigonometry, Analytical Geometry, and Surveying are studied.

In the last two years the study of English is continued into Anglo-Saxon and Comparative Grammar, and Early English. The History of English Literature is pursued. Select Prose and Verse are critically studied. Practice is given in writing and speaking. History is continued. The modern languages are continued. Political Economy is studied. Comparative Philology is commenced. Other studies are: Mental and Moral Philosophy, Physics, Mechanics, Surveying, Zoology, and Geology.

SCHEDULE OF STUDIES.

FOURTH, OR FRESHMAN CLASS.

First Term.—Rhetoric; Composition—Descriptive, Narrative; Mathematics—Algebra; French or German—(Begun); Latin; The Culture of the Intellect—Lectures; Geography of the Roman Empire—Lectures; Spanish and Hebrew—(Optional through the course).

Second Term.—English Language—Hadley; Composition—Exposition, Argument; Mathematics—Algebra; Geometry; French or German; Latin; Lectures on Books.

THIRD, OR SOPHOMORE CLASS.

First Term.—English Language and Literature—Study of Masterpieces; Composition—Exposition and Argument; Imaginative, etc.; Mathematics—Trigonometry, Plane and Spherical; French; German; Latin; Chemistry—Lectures and laboratory; Library Work, with Lectures.

Second Term.—Composition—Account of books read; Historical Investigation, etc.; Style—Abbott's "How to Write Clearly;" History; Mathematics—Analytical Geometry; Surveying; French; German; Latin; Chemistry.

SECOND, OR JUNIOR CLASS.

First Term.—Anglo-Saxon Grammar (Elective); History of English Literature; Composition—Literary Studies; Sketches, Prose or Verse, etc.—(Elective); History; German—(Elective); French—(Elective); Latin—(Elective); Chemistry—(Elective); Zoology.

Second Term.—Anglo-Saxon and Early English Literature—(Elective); History of English Literature; Composition—Character Studies; Literary Criticisms, etc.—(Elective); History—(Elective); German—(Elective); French—(Elective); Latin—(Elective); Zoology; Physics; Grecian Antiquities—Lectures—(Elective).

FIRST, OR SENIOR CLASS.

First Term.—English—Select Prose—(Elective); Composition—Special Investigations; Political, Æsthetic, Philosophical—(Elective); Comparative Philology—Lectures—(Elective); Political Economy; Moral Philosophy—Lectures; German—Select authors—(Elective); French—Select authors—(Elective); Astronomy (Elective); Geology; Physics.

Second Term.—English—Select Poetry—(Elective); Composition—Philosophical, Literary, Oratorical—(Elective); Political Economy—Lectures and discussions; Linguistics—Whitney's "Language and Study of Language;" German—Select authors; History of Literature—(Elective); French—Select authors; History of Literature—(Elective); Physics; Geology; Lectures on Law—(Optional); Thesis—(Preparatory to graduation).

COLLEGE OF MEDICINE.

FACULTY.

JOHN LECONTE, M. D.,

President.

ROBERT A. McLEAN, M. D.,

Secretary and Professor of Principles of Surgery and Clinical Surgery.

R. BEVERLY COLE, M. D.,

Dean and Professor of Obstetrics and Diseases of Women and Children.

C. M. BATES, M. D.,

Professor of Clinical Medicine and Physical Diagnosis.

M. W. FISH, M. D.,

Professor of Physiology.

JAMES SIMPSON, M. D.,

Professor of Materia Medica, Therapeutics, and Clinical Medicine.

F. W. HATCH, A. M., M. D.,

Professor of Public Hygiene.

N. J. MARTINACHE, M. D.,

Professor of Ophthalmology and Otology.

G. A. SHURTLEFF, M. D.,

Professor of Mental Diseases and Medical Jurisprudence.

W. F. McNUTT, M. D.,

Professor of Theory and Practice of Medicine.

WILLIAM LEWITT, M. D.,

Secretary, and Lecturer on Anatomy, General and Special.

Lecturer on Pathology, Histology, and Microscopy.

A. W. PERRY, M. D.

Professor of Chemistry.

STUDENTS.

THIRD COURSE.

NAMES.	Nativity.
H. P. Nagle.....	Ireland.
Mrs. M. K. Curren.....	Tennessee.
Miss Sarah I. Shuey, Ph. B.	Illinois.
William C. Bruns.....	California.
Arthur J. Guillemard.....	France.
George T. Bradbury.....	Indiana.
L. T. Seavey.....	California.
Charles Osler.....	Illinois.
J. A. Pruett.....	Missouri.
J. F. Summers.....	California.
M. A. McLaughlin.....	Ireland.
Julius A. Crane, M. D.	Wisconsin.
Total.....	12.

SECOND COURSE.

NAMES.	Nativity.
Arthur W. Scott, Ph. B.	California.
E. A. Younger.....	California.
Miss H. J. Hodgdon, A. B.	Maine.
Gilbert Foot.....	California.
Mrs. J. C. Sparks.....	New York.
R. Harmon, Ph. B.	California.
D. M. Addington.....	California.
Thomas W. LeCrone.....	Ohio.
George W. Downs.....	Iowa.
H. H. Howell.....	Arkansas.
Total.....	10.

FIRST COURSE.

NAMES.	Nativity.
H. A. Gale.....	Canada.
R. M. Osburn.....	Pennsylvania.
J. P. Fuller.....	Michigan.
W. C. Voigt.....	Prussia.
L. A. Sabey.....	Norway.
J. W. Robertson, A. B.	Alabama.
Henry M. Pond, A. B.	California.
Franklin F. Lord.....	Chili.
Herman Mueller.....	Switzerland.
Horace H. Caldwell.....	California.
R. C. Meyers.....	New York.
Benjamin P. Wall, Ph. B.	Sandwich Islands.
John F. Foulkes.....	North Carolina.
Horace Laidlaw.....	Wisconsin.
Felix Bettelheim.....	Hungary.
Total.....	15.

SUMMARY.

Third Course	-----	12
Second Course	-----	10
First Course	-----	15
Total in College	-----	37

ANNOUNCEMENT.

The Medical Department of the University of California is an integral part of the State's great central educational institution, and not an affiliated College, or a private enterprise.

In order to render medical education more systematic and thorough, an improved and higher system has been established in this department.

The Board of Regents recently decided that all future matriculates shall attend three full courses of lectures previous to their examination for the degree of "Doctor in Medicine."

The courses will, as heretofore, be of five months' duration, and the studies will be so graded as to allow the constant introduction of new matter as the student progresses, and at the same time to secure at least as much repetition of the more essential subjects as in the former system of teaching. The details of the new system or plan are given below.

In addition to the important features of a lengthened period of study and a graded curriculum, it will be easily appreciated that, to make the system more perfect and practical, clinical and laboratory instruction, and the personal teachings of each student in all the practical subjects, such as physical diagnosis, medicine, surgery, diseases of women, etc., are indispensable, and accordingly ample provision has been made in that direction; in short, the present reform in the University of California is designed chiefly to introduce into the official curriculum of medical study the methods which have long been used in European schools, and which in all other departments of science have given vitality and practical utility to the older didactic system.

In issuing the present announcement, which contains the first mention of the first step towards elevating medical education, and the standard of requirement of candidates for the degree of "Doctor in Medicine," in California, it is but proper to call attention to the very advanced position in which it will place the Medical Department of the University, and to the peculiar advantages which all of its matriculates will hereafter enjoy.

It is universally acknowledged that the term of attendance on lectures has hitherto been too short, and in response to this general conviction it has been decided to require the longer period of three years. In doing so, moreover, such extensive advantages have been added to the course, that it is confidently felt and believed that the future graduates of this institution will not only be entitled to, but will receive, a larger share of the confidence of the community than can be claimed by those who have pursued a less thorough course of study.

The Fifteenth Annual Course of Lectures in this institution will commence on the first Monday in June, and terminate on the 31st day of October, 1878.

The Faculty, in announcing their course of instruction for the ensuing year, feel warranted in claiming for San Francisco a superiority in climate over any of the eastern cities, which renders the otherwise arduous labors of the student comparatively easy and agreeable on the one hand, and facilitates the study of practical anatomy, irrespective of season, on the other; indeed, the opportunities for prosecuting the study of practical anatomy in this city are superior to those of any other known region of the globe. Independent of the advantages of climate, material for dissection (the supply of which is regulated by law) is abundant and cheap, and our salubrious breezes not only preserve the *cadaver* for an indefinite length of time, but secure the health of the student from injury in consequence of the effluvium, so constant an attendant upon dissections elsewhere. Students, therefore, of all tropical countries, and of the Southern States of our Union, as well as of the North, who are unable from these causes to prosecute their studies at home, will find it greatly to their advantage to repair to San Francisco.

The Faculty take pleasure in announcing the superior classes for the past two sessions. This extremely gratifying evidence of success has encouraged the Faculty to renewed exertions, and, with the coöperation of the Board of Regents, to improve the facilities for teaching the science in all its branches and advance the standard of requirement for graduation.

The recent steps taken in this direction are mere forerunners of those to be taken in the future, determined as they are that the Medical Department of the State University shall stand foremost on the Pacific Coast in its advocacy of progression and elevation of the science of medicine as reflected through its Alumni, to the highest standard of requirement of any of the European schools.

SPRING, OR PRELIMINARY COURSE.

This session, beginning the first week in February and continuing until the commencement of the Summer or regular course (although not obligatory upon the student at present, will at no distant day be made so), is strongly recommended to those who can attend it.

It includes Lectures, Didactic and Clinical, by members of the Faculty, on subjects of importance, which it is impossible to treat in the regular term, thus enabling the Professors to deal exhaustively with their respective subjects, and the student to prosecute a more thorough curriculum than the regular course can possibly furnish.

CLINICAL INSTRUCTION.

The facilities furnished in connection with this institution to the student for clinical study are not excelled by any College in America.

The County Hospital, of nearly five hundred beds, of which Professor Toland is one of the surgeons, Professor Bates, one of the physicians, and Professor Martinache, the Ophthalmologist, supplies all that can be desired in this direction.

Through the politeness of Dr. Hutchins, of the San Francisco Female Hospital, the advanced students or under-graduates of the University of California will have assigned to them, from time to time, cases of obstetrics for their care and conduct.

City Receiving Hospital—County Jail—City Branch Jail—House of Correction.—Through the courtesy of Dr. C. Blach, City Physician, students will be permitted to attend the practice of these several public institutions, and be assigned cases to treat coming under the observation and care of the San Francisco Benevolent Society.

Independently of the clinics at the several hospitals, a very large and instructive clinic is given at the College building, under the direction of Professor Cole and Professor Simpson.

Professor Cole presents in this clinic a large variety of cases of diseases affecting the special organs of the female, and also details students to treat *externe* patients under his general guidance.

Professor Simpson will assign cases to the Senior Class, and thus practice each student in the duties that will devolve upon him when he leaves the College and assumes the obligations and responsibilities of the profession.

The clinics are so arranged as in no wise to interfere with the didactic instruction, and yet to enable the student to follow daily the treatment of disease at the bedside and at the residence of *externe* patients.

THE MUSEUM

Of the College has recently received large accessions to its collection of wet and dried preparations, in the various departments, together with extensive additions in wax and *papier maché*, fitted for illustrating the Lectures. Professor Cole, lately returned from Europe, has secured for the other Chairs, as well as for his own, every improvement necessary or useful for explanation.

SPECIAL BRANCHES OF STUDY.

The following branches are annually taught: Principles and Practice of Medicine, Anatomy, Physiology, Surgery, Chemistry, Materia Medica, Clinical Surgery, Clinical Medicine, Pathology, Midwifery, Diseases of Women and Children, Medical Jurisprudence, Clinical Diseases of Women, Clinical Midwifery, Ophthalmology, and Otology.

PRACTICAL ANATOMY.

The dissecting room, lighted from the roof and provided with every modern convenience, is open all the year for such as are prosecuting the study of practical anatomy. Material is abundant and cheap, and every facility is furnished the student.

SURGERY.

Instruction in this department will embrace:

First—A regular course of lectures on the principles and practice of surgery.

Second—Demonstrative Surgery upon the *cadaver*; and

Third—A thorough clinical course, including diseases of the genito-urinary apparatus, at the City and County Hospital and at the College building.

OBSTETRICS.

In this course there will be no lack of effort to bring everything pertaining to this department as clearly and practically before the mind of the student as the present state of the sciences will admit.

The lectures will be amply illustrated by colored drawings, many of which have been taken from nature, and also by wet preparations.

The different operations in obstetrics will be performed not only on the manikin, but upon the *cadaver*, thus both illustrating and demonstrating the essential principles which are to govern the practitioner.

The student will also be instructed and practiced in the use of obstetrical instruments, besides enjoying the opportunity of visiting the San Francisco Lying-in Hospital, and applying to practice the principles taught and demonstrated in the lecture-room.

MATERIA MEDICA.

It will be the aim of the Professor of Materia Medica to bring before the class all that is of importance and bears the impress of truth, connected with this department, in such a manner as to be readily comprehended by the student. The lectures will be illustrated by colored drawings from nature, by the exhibition of the various medicinal plants and preparations in use, and by demonstrating their reactions and combinations.

Recent plants will be presented and described, when expedient, particularly those which are indigenous to our soil, of which there are many varieties scattered over this vast region, possessing great therapeutic value, a knowledge of which is indispensable to the practitioner of medicine in this country.

PHYSIOLOGY.

The lectures in this department will embrace a consideration of both general and special Physiology, including all that has been developed through the microscope up to the present time, and will be illustrated by the largest and most complete series of colored drawings in the United States, prepared exclusively for these lectures, besides which the vast collection of preparations and drawings of the Scientific Department at Berkeley are at the command of the Professor.

These drawings, furnished at great cost, are designed to convey to the mind of the student ideas which it is impossible to communicate by language alone.

Vivi-sections will be practiced when necessary to demonstrate principles, and the microscope, an instrument to which the science of Physiology is much indebted, will be freely used for illustrating important facts and principles, and the student will not only receive instruction in theory, but in the means of arriving at facts in this important science.

CHEMISTRY.

All important principles will be illustrated by means of suitable philosophical, chemical, and other apparatus; and facts and theories will be presented in a clear and comprehensive manner.

Toxicology will receive that careful attention which its medico-legal importance demands.

PRINCIPLES AND PRACTICE OF MEDICINE.

It will be the aim of the Professor in this department to impart to the student the most important practical knowledge, to present in his lectures a summary of those facts and principles which are embraced in the science of the practice of medicine at the present time, and which furnish to the medical man the only safe guide.

He will endeavor to give a faithful description of diseases, their etiology, symptoms, diagnosis, prognosis, lesions, and treatment.

He will convey to the student a knowledge of the pathological changes which occur in different diseases, by means of plates, various preparations, and by recent specimens of diseased parts.

MEDICAL JURISPRUDENCE AND MENTAL DISEASES.

The lectures in this department will exhibit the principles of legal medicine and the duties of medical men as experts in giving testimony in Courts of justice, and in the examination of medico-legal questions; will embrace a view of insanity, suicide, infanticide, legitimacy, poisoning, death and injury from violence, feigned sickness, duties of Coroners, and other topics of practical importance, whether to the student of medicine or of law; together with a thorough course on the various diseases of the mind, so common in this State.

The facilities for observation of insanity at the command of the Professor of this department are unequalled by any other. For many years the Physician-in-Chief of the State Lunatic Asylum, his vast experience has necessarily made him the authority on these diseases, and must render his course eminently interesting and practical.

CLINICAL MEDICINE AND SURGERY.

Opportunities are furnished to the student for practical study at the bedside at the City and County Hospital, College building, and at the residences of patients. Great pains are taken by the gentlemen presiding over these departments to give the diligent student every facility for observation and practice, thereby enabling him to test, by the evidence of his senses, such principles and facts as have been taught in the lecture-room.

Every effort will be made to impart practical instruction in the diagnosis and treatment of disease.

Especial attention will be given to *physical diagnosis*, including auscultation and percussion, and each advanced student will be afforded ample opportunity to diagnose and treat cases under the direction of the clinical professors.

ANATOMY.

The lectures on anatomy will be illustrated fully by the *cadaver*, and by both wet and dry preparations, and will include a course on general, special, and regional anatomy, thus preparing the student for active surgical practice, as well as giving him a thorough knowledge of the relation of organs, and the histology of every tissue.

OPHTHALMOLOGY AND OTOTOLOGY.

The great and growing importance of Diseases of the Eye and Ear, and the extensive discoveries and improvements recently made in these departments, have led to the establishment of a Professorship of Ophthalmology and Otology.

The student will have frequent opportunities of witnessing operations of different kinds, particularly on the eye, and will be instructed in the use of the ophthalmoscope and other instruments, in the diagnosis and treatment of the diseases of these organs. For this purpose a proper room has been specially furnished and fitted, and the student will be taught their use practically.

PUBLIC HYGIENE.

The science of Hygiene, which of late years has assumed so important a place in the curriculum of a medical education, has induced the Board of Regents to establish a chair of Public Hygiene. The Permanent Secretary of the State Board of Health has been selected to fill this chair.

DISEASES OF WOMEN OR GYNECOLOGY.

This practical branch of the science of medicine and surgery, which has made within the past few years such rapid strides toward thorough development, and which includes so large a percentage of all diseases coming under the observation and treatment of the medical man, and which has recently received so much attention at the hands of the profession, will be fully taught, both didactically and clinically.

The Medical Department of this University was the first to establish a clinic for the treatment of this class of diseases.

EXAMINATIONS.

In accordance with the requirements of the improved and extended course of instruction adopted by the Board of Regents and Faculty, it has been determined that an examination shall be held at the close of each year, as follows:

FIRST YEAR.

Anatomy, Physiology, General Chemistry, and Materia Medica.

SECOND YEAR.

Anatomy, Physiology, Medical Chemistry, Materia Medica, Pathological Anatomy and Histology, Clinical Medicine, Physical Diagnosis, and Clinical Surgery.

THIRD YEAR.

Anatomy, General and Surgical, Physiology, Chemistry, Materia Medica and Therapeutics, Obstetrics, Theory and Practice of Medicine, Surgery, Clinical Medicine, Physical Diagnosis, Clinical Surgery, Gynecology, Ophthalmology, Mental Diseases, Medical Jurisprudence, Public Hygiene, and Laryngoscopy.

RULES AND REQUIREMENTS FOR GRADUATION.

I. The candidate for the Degree of Doctor of Medicine must have attained the age of twenty-one years, and be of good moral character. He must have applied himself to the study of medicine for three years, and have attended at least his last course of instruction in this school; have prepared a satisfactory thesis of his own composition, and in his own handwriting, which must be submitted prior to his admission to examination.

II. Students who have attended one full course in any regular or recognized Medical College shall, upon satisfactory examination in the curriculum provided for the first year, be admitted as students of the *second course* in the University of California. Students who have attended two courses in any regular and recognized Medical College shall be admitted as students of the *third course* in this Institution, after having passed a satisfactory examination in the curriculum provided for the second year. Graduates of other regular Medical

Colleges, in good standing, shall be admitted as students of the *third course* in this Institution without any examination.

III. When a candidate applies to the Secretary of the Faculty for examination, he must give satisfactory evidence that the above rules have been complied with, which evidence will be presented by the Secretary to the Dean, by whom an order for examination will be issued.

IV. The candidate will pay the graduation fee on the presentation of his thesis to the Secretary, and upon receiving notice of having passed a satisfactory examination, he will enter his name on the register for the purpose of being reported to the Board of Regents.

V. Candidates who have passed their examination, and in other respects complied with the regulations, are reported by the Secretary of the Faculty to the Dean of the University, who communicates such report to the Board of Regents, in order that, if approved of by them, their mandamus may be issued for conferring the Degree.

VI. The Commencement for conferring the Degree of Doctor of Medicine is held during the month of November.

VII. For the convenience of such candidates as have at the close of the term not completed their full three years of study, and have complied with every other requirement, an examination will be held in the month of May, and the Degree will be conferred upon such as are successful at the next regular Commencement. A certificate will be given, however, setting forth the facts in the case, which will be recognized by the State Board of Examiners, and a license to practice by them granted.

VIII. In accordance with the Organic Act under which the University was incorporated, the Faculty will examine all candidates, whether educated in the University or other schools. Such as come from other Colleges must have been examined by the Faculty of said College, and recommended by them as proficient candidates for the Degree, and on passing the examination in the University, they may receive the Degree and Diploma, and rank as graduates of this Institution.

EXPENSES.

Matriculating fee (paid but once).....	\$5 00
Fee for the First Course of Lectures	130 00
Fee for the Second Course of Lectures	130 00
Third Course of Lectures gratuitous for such as have paid for two full courses.	
Graduating fee	40 00

NOTE.—All fees are payable in advance to the Secretary of the Faculty, who will issue a general ticket to all the lectures. No promissory notes will be received, but such as desire may obtain tickets for one or any number of the chairs separately.

BOOKS OF REFERENCE.

Anatomy—Gray's Anatomy, Wilson's Anatomy, and Richardson's Anatomy.

Physiology—Dalton's Physiology, Draper's Human Physiology, Flint's Physiology.

Chemistry—Fowne's Chemistry, by Bridges.

Materia Medica—H. C. Wood's Therapeutics, Materia Medica, and Toxicology, Farquarson's Materia Medica, and United States Dispensary.

Surgery—Erichsen's Science and Art of Surgery, Gross' System of Surgery, H. H. Smith's Operative Surgery, and Toland's Lectures on Practical Surgery.

Principles and Practice of Medicine—Aitken's Practice of Medicine, Bennett's Practice of Medicine, and Tanner's Practice of Medicine.

Clinical Medicine—Tanner's Clinical Medicine, DaCosta's Medical Diagnosis, and Loomis' Physical Diagnosis.

Obstetrics and Diseases of Women and Children—Bedford's Principle and Practice of Obstetrics, Scauzoni's Diseases of Women, Thomas' Diseases of Women, Sim's Uterine Surgery, Simpson's Diseases of Women, West on Diseases of Children, and Smith's Diseases of Children.

Ophthalmology and Otology—Troelsch on the Ear, Wells' Treatise on Diseases of the Eye, and Donders on Refraction and Accommodation.

Medical Jurisprudence and Mental Diseases—Maudsley's Physiology and Pathology of the Brain, Bucknell and Tuke on Insanity, and Taylor's Medical Jurisprudence.

BOARDING.

Students may obtain good board in San Francisco at from *five* to *ten* dollars per week, and, if they desire, may live at a less expense.

N. B.—Students, on arriving in the city, should call at once upon the Secretary, Dr. R. A. McLean, 603 Merchant, corner Montgomery Street, or the Dean, Professor R. Beverly Cole, 518 Sutter Street, who will furnish all necessary information.

Letters must be addressed to the Secretary, at his office, or the College, Stockton Street, between Chestnut and Francisco.

GRADUATES.

1877.

G. P. McColl,
W. T. Williamson,
S. E. Josephi,
Joseph Pescia,
James Frost,

J. J. McDonald,
E. M. Weiss,
George E. Reynolds,
J. M. Heinemann,
J. R. Swisher,

Benjamin E. Stevenson,
George A. Reich,
S. E. Duncan,
F. Von Buelow,
S. P. Wharton.

1878.

William C. Bruns,
George F. Bradbury,
Charles Osler,
Sarah I. Shuey,

M. K. Curren.
Arthur J. Guillemard,
John A. Pruett,
John F. Summers,

M. A. McLaughlin,
Frank A. Lewitt,
L. T. Seavey.

CALIFORNIA COLLEGE OF PHARMACY.

INCORPORATED AUGUST 7, 1872.

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COLLEGE OF PHARMACY.

FACULTY.

JOHN LÉCONTE, M. D.,

President.

WILLIAM T. WENZELL,

Professor of Chemistry.

W. M. SEARBY,

Professor of Materia Medica.

EMLEN PAINTER,

Professor of Pharmacy, and Dean of Faculty.

HERMANN BEHR, M. D.,

Professor of Botany.

CLASS OF THE SIXTH SESSION—1878.

Morrison, Wm. Parks
 Messing, Louis P.
 Day, Joseph H.
 McDonnell, S. A.
 Hammit, Charles H.
 Roethe, L. H.
 Moore, C. C.
 Weiss, Philip
 Fraser, Thomas T.
 Gould, David F.
 Gage, William H.
 Schwarzmamm, Max.
 Burnett, G. G.
 Herzog, Otto H.
 Sommer, Adolph
 McLaughlin, W. H.
 Von Lendinghausen, A. W.

Runyon, Ed. W.
 Mathewson, J. McL.
 Helke, W. L.
 Vreeland, F. L.
 Smith, Arthur H. H.
 Crilley, Wm. M.
 Ospina, Tulio
 Ospina, Pedro N.
 Gove, David J.
 Minor, G. W.
 Pruett, J. A.
 Wappel, George
 Summers, John F.
 Joy, Edwin W.
 Hutchinson, Charles S.
 Van Orden, L.
 Hurtzig, W. F. N.

Parker, Ed. S.
 Miller, George H.
 Winch, F. C.
 McDonnough, J. F.
 D'Artenay, Eugene
 Zemansky, John H.
 Shuey, Sarah I.
 Hunt, D. D.
 Semler, P. E. A.
 Murphy, M. J.
 Lewis, H. M.
 Evans, Thomas A.
 Brown, E. M.
 Thurston, R. L.
 Kelly, D. W.
 Mervy, E. C.

Total..... 50.

COLLEGE OF PHARMACY.

CIRCULAR.

The Trustees of the *California College of Pharmacy* desire to call the attention of all persons engaged in the drug business on the Pacific Coast to the following announcement of the lecture-course for the approaching session.

In no other part of the United States is there such need of the advantages which this College supplies. The long hours of business prevalent here, the frequent changes in the management of our various establishments, combined with other causes well known to every Apothecary, render it difficult for employers to give systematic instruction to their assistants and apprentices in the various branches of science with which they ought to be familiar. This instruction the College provides, and the Trustees hope that employers will afford their assistants the requisite time to attend the lectures, as well as a short time every day for study.

The Trustees would also urge young men who may have entered the drug business without a liberal education to lose no time in making up this deficiency. In addition to a good English education, they should at least know enough of Latin to enable them to read prescriptions and pharmacopœias with readiness and accuracy.

THE LECTURES

Will be delivered in the Hall of the Academy of Sciences, corner of Dupont and California Streets, on Tuesday and Friday evenings, commencing March 12th, and terminating about the middle of September. In order that the students may derive the fullest benefit from the lectures, they should be present at the opening of the session.

CHEMISTRY.

The lectures will be delivered on Friday of each week, at 7:30 P. M.

This course will present a systematic study of theoretical chemistry, according to the latest views of chemical philosophers.

Physics will be dwelt upon sufficiently for the illustration of the general properties of matter—the forces of gravitation, adhesion, and cohesion.

Caloric, in its relation to chemistry, will be treated of.

This will be followed by the laws of chemical affinity, the electro-chemical theory, symbols, nomenclature, and the laws of chemical combination.

A full and concise course of the chemistry of the non-metallic and metallic bodies is next taken up, comprising the more important elements, and those of special interest to the pharmaceu- tical student.

The course to conclude with organic chemistry, in which the chemistry of the alcohols, ethers, organic acids, sugars, glucose, gums, starch, glucosides, alkaloids, etc., will receive their due share of attention.

MATERIA MEDICA.

The lectures will be delivered on Tuesday of each week, at 8:30 P. M.

The lectures on Materia Medica are devoted to those substances, chiefly of vegetable origin, which are used in medicine, and which are included under the general designation of *drugs*.

These articles are treated of in a systematic manner, notice being taken of the sources from which they are derived, their natural and commercial history, principal constituents, and remedial qualities. The ordinary and toxical doses, with antidotes to the latter, receive careful consideration.

The students are instructed as to the proper time for collecting the various vegetable products, as well as the best modes of preserving them. Attention is called to their physical properties as met with in trade, and to the leading characteristics of each drug. Substitutions, adulterations, and natural impurities, with the methods of detecting the same, are duly considered, as also the distinguishing features observed in articles of superior and inferior quality.

PHARMACY.

The lectures will be delivered on Tuesday of each week, at 7:30 P. M.

The introductory lectures to this course embrace the art of weighing and measuring; definition of the systems of weights and measures in use, and authorized by the United States, British, French, and German Pharmacopœias; the theory and practice of obtaining the specific gravity of liquids and solids. A description of the apparatus necessary to the proper conduct of the business of the Pharmacist, and the purposes to which they are applied—such as Comminution, Solution, Filtration, Neutralization, Precipitation, Crystalization, and the management of heat in its application to the processes of Evaporation, Distillation, Sublimation, Calcination, etc., will be embraced in the regular course, in which the preparations and products official in the United States and other Pharmacopœias, together with such non-official preparations as may merit attention, will be considered.

It being impossible to consider each individual process minutely, it will be the chief aim to thoroughly elucidate those processes that

are types of others; referring to the typical process whenever it can be done without depriving the student of valuable information, and drawing attention to any peculiarity or reason for modifying or deviating from the type.

By this method of instruction it is believed the student will acquire a comprehensive knowledge of his profession, and will readily find similarity between substances that are, physically, entirely different. Manufacturing and Extemporaneous Pharmacy will receive its full share of attention; and those processes that can be conveniently carried out by the Pharmacist will be minutely dwelt upon. The adulterations and sophistications, to which the officinal preparations are subject, and the methods of their detection, will be noticed to the extent their importance may demand.

BOTANY.

The lectures will be delivered on Friday of each week, at 7:30 P. M.

The lectures include structural, functional, and systematic botany, and geography of plants. Excursions will be made into the country on alternate weeks during the session, for the purpose of collecting and studying indigenous plants, under the direction of the Professor, and on the day next succeeding the excursion a lecture will be given in the Hall of the Academy of Sciences, at 1 P. M.

TEXT-BOOKS.

United States Dispensatory and United States Pharmacopœia; Baker's Chemistry; Roscoe's Chemistry; Fowne's Chemistry; Pereira's *Materia Medica*, edited by Redwood and Bentley; Parrish's Pharmacy; Gray's Botany.

CONDITIONS OF GRADUATION.

1. The candidate must be of good moral character and have attained the age of twenty-one years.

2. He must have attended two full courses of the lectures given by this College, or one of those given by some other College of Pharmacy whose conditions of graduation are based upon the like term of service, and the final course in this College.

3. At the time of the final examination for the degree of Graduate in Pharmacy, the candidate must have had at least three and a half years' practical experience; but he shall not receive his diploma until he shall have completed the term of four years' service.

4. Candidates for graduation will be subjected to a written, oral, and practical examination.

a. The examination will embrace questions in Theoretical and Pharmaceutical Chemistry, Botany, Pharmacognosy, and *Materia Medica*, a knowledge of the United States Pharmacopœia, of the various systems of weights and measures, of the maximum doses of powerful remedial agents, of the antidotes for poisons, and the translation of Latin prescriptions.

b. The practical examination will comprise the analysis as to identity and purity of simple medicinal chemicals, the actual compounding of prescriptions requiring skill and judgment, the identification of specimens in the several departments, and the making of chemical and pharmaceutical preparations.

5. No special examination will be held, but only one regular examination at the end of the regular course.

6. Each candidate must present an original thesis written in English, in his own handwriting, and also pass his examination in English.

6. He must be recommended jointly by the Professors and the Examining Board, which recommendation will be acted upon by the Regents of the University of California, by whom the degree is conferred (the College of Pharmacy being affiliated with the University).

8. Any student who has not had the full three and a half years' service here referred to, but who has complied with all the other conditions of graduation, may present himself for examination; and should he receive the requisite number of credits, will be awarded a "Certificate of Proficiency," upon which he will afterwards be entitled to a diploma on producing evidence of having completed the four years' practical experience.

FEES.

Lecture Tickets (for the season) -	\$50 00
Matriculation Ticket	2 50
Diploma Fee	10 00

The matriculation and lecture tickets must be taken out by each student in person, and must be indorsed, the former within fifteen and the latter within thirty days from the beginning of the lecture-course.

Members and graduates of the College, and students who have attended two sessions in the College, are admitted free to the lectures.

Students in any of the departments of the University of California will be admitted to the lectures free by matriculating and paying only for the matriculation ticket.

Medical students or others not intending to pursue pharmacy as their vocation will be admitted to the lectures, or any one of the courses they may desire to attend, by paying the matriculation fee, and that of the chair or chairs of instruction, and such students will enjoy the same advantages as regular students of pharmacy, except that they will not be eligible to the degree of Graduate in Pharmacy.

CLERKS AND STUDENTS.

Drug clerks and students, on coming to the city, and those out of employment here, who are desirous of obtaining situations, may call on the Dean of the Faculty and register their names.

Young men coming to the city to attend lectures should bear in mind that they cannot expect to receive much compensation whilst attending lectures and learning the business.

Pharmacists in want of assistants are informed that they can consult the list of applicants for situations, and are requested to notify the Dean when vacancies occur in their establishments.

Any further information may be obtained by addressing Emlin Painter, Dean of the Faculty, College of Pharmacy, southeast corner Clay and Kearny Streets, San Francisco.

LIST OF GRADUATES.

1874.

J. P. Heany..... Thesis, "Oreodaphne California."

1875.

Robert C. Meyers..... "Sesame Oil and its Uses."
 Thomas D. Graham..... "Oxytropis Campestris."
 Gaston E. Bacon..... "Various Analyses of Tincture of Opium."
 Adolph J. Kaln..... "Pharmaceutical Education."
 F. P. McLean..... "Analysis of Magnesites."

1876.

Nathan Rogers..... "Sium Latifolium."
 Frederick E. Ray..... "California Opium."
 Henry R. Harris..... "Hydrocyanic Acid."

1877.

F. C. Bauer..... "Analysis of Well Water."
 John Devine..... "Seidlitz Powders."
 John M. Curragh..... "Damiana."
 Edward Selzer..... "Percolation vs. Maceration."

GRADUATES.

1878.

Samuel Alexander McDonnell,
 Charles Crislie Moore,
 Philip Weiss,
 Edward Silas Parker,

Edwin Wolcott Joy,
 William Henry McLaughlin,
 Henry Joshua Zeemansky,
 Willie Ludwig Helke.

HASTINGS LAW DEPARTMENT OF THE UNIVERSITY OF CALIFORNIA.

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HON. O. P. EVANS	SAN FRANCISCO.
S. M. WILSON, Esq.	SAN FRANCISCO.
THOS. B. BISHOP, Esq.	SAN FRANCISCO.
THOS. I. BERGIN, Esq.	SAN FRANCISCO.

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President.

JOHN NORTON POMEROY, LL. D.,
Professor of Municipal Law.

WM. H. PLATT, D. D., LL. D.,
Professor of Ethics and Rules of Morality.

S. CLINTON HASTINGS,
Dean.

CHARLES P. HASTINGS, B. S.,
Registrar.

Office of Dean and Registrar, Room 2, Court Block (636 Clay Street), San Francisco.

CONDITIONS OF AFFILIATION.

At a meeting of the Board of Regents, held August 7th, 1879, the special committee on the matter of the affiliation of the Hastings College of Law with the University, submitted the following:

Resolved, That the institution known as the Hastings College of Law shall be affiliated with the University of California and made an integral part of the same, and incorporated therewith, upon the following terms and conditions, which are hereby made a part of such affiliation and incorporation:

First—The Directors of said College, named in the Act of Legislature which organized it, approved March 26th, 1878, shall have authority to fill vacancies in their Board when the same occur, as prescribed in the said Act, subject to the approval of the Board of Regents of said University, except in so far as qualified by the next section.

Second—Honorable S. Clinton Hastings, as founder of said College, and his legal representatives, shall always be entitled to have the appointment from his heirs or representatives of one of said Directors, without such appointment being subject to the approval of the said Board of Regents.

Third—The Faculty of said College shall have the authority to present to the said Board of Regents the names of such students of said College as they recommend for diplomas, and the said Board of Regents shall issue diplomas to said students, subject to the right of said Regents to refuse the same for cause.

Fourth—As soon as practicable, there shall be set apart for the use of the students of said College some room or suitable hall at the University.

Fifth—The present Dean of said College, the Honorable S. Clinton Hastings, shall during his life-time have a seat in the Academic Senate of said University, be a member thereof, and have a vote therein.

Sixth—The said College shall be subject to the dominion of the said Board of Regents in all matters pertaining to its management and welfare.

Seventh—The number and duties of the Professors of said College shall be prescribed, and the business of said College managed, by said Board of Directors, subject to the approval of said Board of Regents.

The committee on the affiliation of the Hastings Law College with the University respectfully report that the plan and method of such affiliation, which seems to them suitable and proper, and which is acceptable to Honorable S. C. Hastings (having been fully approved by him), are embodied in the foregoing resolutions, which your committee have prepared, and of which they recommend the adoption.

August 4th, 1879.

The report of the committee was formally adopted.

STUDENTS—1879-80.

MIDDLE CLASS.

NAMES.	Residence.
John Q. Adams	San Francisco.
Charles S. Andrews, A. B. (Bdn.)	San Francisco.
Charles R. Barry, B. S. (S. C.)	San Francisco.
E. S. Belknap	San Francisco.
A. F. Benjamin	San Francisco.
D. L. Bishop	Lower Lake, California.
J. I. Boland	San Francisco.
C. K. Bonestell, A. B. (U. C.)	San Francisco.
A. C. Bradford, Jr., Ph. B. (U. C.)	San Francisco.
E. R. Brooks	San Francisco.
Earnest Brand	San Francisco.
V. P. Buckley	San Francisco.
L. W. Cheney, Ph. B. (U. C.)	Berkeley, California.
Joseph F. Coffey	San Francisco.
Patrick Cumins	San Francisco.
Wallace O. Currier	San Francisco.
William C. Burke	Berkeley, California.
W. R. Daingerfield, A. B. (U. C.)	San Francisco.
A. D. D'Ancona, A. B. (U. C.)	San Francisco.
John D'Arcy	San Francisco.
Frank P. Deering, A. M. (U. C.)	San Francisco.
J. H. Deering, Jr.	San Francisco.
J. B. de las Casas	Oakland, California.
Louis E. Dunand	San Francisco.
Peter F. Dunne	San Francisco.
E. W. Emerson	San Francisco.
James D. Elms	Berkeley, California.
James T. Fleming	San Francisco.
T. F. Graber	Berkeley, California.
Theodore Gray, A. B. (U. C.)	San Francisco.
Robert P. Hastings, A. B. (H. U.)	San Francisco.
E. W. Hawley	San Francisco.
Alexander Heyneman	San Francisco.
James E. Hughes	San Francisco.
James A. Hall	Watsonville, California.
Samuel Irving, A. B. (U. C.)	Berkeley, California.
J. Walter Knox	Merced, California.
E. J. Linforth	San Francisco.
John M. Lucas	San Francisco.
Fiesco Mandelbaum, A. B. (U. C.)	San Francisco.
F. C. Marshall	San Francisco.
D. B. Marx, Ph. B. (U. C.)	San Francisco.
E. J. McCutchen	San Francisco.
E. W. McNally	San Francisco.
Henry C. McPike	Napa City.
George D. Metcalf	Oakland.
G. H. Mastick	San Francisco.
Leslie F. Miller	San Francisco.
A. F. Morrison, A. B. (U. C.)	San Francisco.
Edward M. Mott	San Francisco.
Charles H. Moore	San Francisco.
Anthony Morganthal	San Francisco.
H. S. Mulford	San Francisco.
James E. Nagle	San Francisco.
F. M. Ostrander	Merced, California.
C. P. Pomeroy	San Francisco.
Martin Quinlan, B. S. (St. M.)	Bodega Corners.
F. W. Reade	San Francisco.
S. H. Regensberg	San Francisco.
John W. Ryland	San José.
Alfred Sayre	San Francisco.

MIDDLE CLASS—Continued.

NAMES.	Residence.
William T. Sesnon.....	San Francisco.
Charles S. Silliman.....	San Francisco.
David Simon.....	San Francisco.
Edward M. Seaman.....	San Francisco.
F. J. Solinsky, Ph. B. (U. C.).....	Berkeley, California.
H. J. Stafford.....	San Francisco.
William F. Stafford.....	San Francisco.
Edwin Swinford.....	San Francisco.
F. S. Stratton.....	Oakland.
Matthew I. Sullivan, B. S. (St. I.).....	San Francisco.
G. C. Sargent.....	San Francisco.
Calvin F. Summers.....	San Francisco.
Gaston Straus.....	San José.
L. P. Tidball.....	San Francisco.
C. L. Tilden.....	San Francisco.
Alfred Tobin.....	San Francisco.
T. O. Toland, A. B. (U. C.).....	San Francisco.
Albert V. Touchard.....	Oakland.
Gustave Touchard.....	Oakland.
F. P. Tuttle.....	Oakland.
H. D. Tuttle.....	San Francisco.
W. M. Van Dyke, A. B. (U. C.).....	San Francisco.
Charles Von Lowenfels.....	San Francisco.
Ryland B. Wallace, A. B. (U. C.).....	San Francisco.
Adair Welker.....	Berkeley, California.
G. A. Whitby.....	Berkeley, California.
F. R. Whitecomb, A. B. (U. C.).....	Berkeley, California.
Joseph W. Winans, Jr., A. B. (U. C.).....	San Francisco.
Ralph Wood.....	Oakland.
George T. Wright, A. B. (U. C.).....	San Francisco.
E. B. Young.....	San Francisco.
George A. Young.....	San Francisco.
Total.....	93.

JUNIOR CLASS.

NAMES.	Residence.
F. M. Angellotti.....	San Rafael.
R. P. Ashe.....	San Francisco.
Robert B. Brenham, A. B. (S. C.).....	San Francisco.
Henry Bordé.....	San José.
Anthony Caminetti.....	Jackson, California.
J. F. Cavagnaro, M. S. (S. C.).....	San Francisco.
John D. Connelly.....	San Francisco.
Samuel E. Crow.....	San Francisco.
E. B. Cutler.....	San Francisco.
Carroll M. Davis, A. B. (U. C.).....	Berkeley, California.
Henry Davis.....	San Francisco.
Hernan A. Druhé.....	San Francisco.
Henry C. Downing.....	Oakland.
Charles H. Foote.....	Berkeley.
George Flournoy, Jr.....	San Francisco.
Jacob Gallaud.....	San Francisco.
S. J. Garibadi.....	San Francisco.
Richard Gerke.....	San Francisco.
Maurice Gradwohl.....	San Francisco.
Jacob Hoeck.....	Berkeley, California.
P. J. Healey.....	San Francisco.
Henry C. Hinckle.....	San Francisco.
Joseph Hutchinson, Ph. B. (U. C.).....	San Francisco.

JUNIOR CLASS—Continued.

NAMES.	Residence.
Howard R. Johnson	San Quentin.
W. N. Kempston	San Francisco.
Albert Kaplan	San Francisco.
William Knox	San Francisco.
William W. Knott	San Francisco.
William D. Lawton	Oakland.
Eugene W. Levy	San Francisco.
George Luce	San Francisco.
Max Loewenthal	Sacramento.
John W. Lewis	Berkeley.
Henry McCrea	San Rafael.
V. C. McMurray, Jr.	Camptonville.
Dwight M. McCauley	San Francisco.
Frank D. Miller	San Francisco.
Lausing Mizner, Ph. B. (U. C.)	Benicia, California.
Benjamin F. Moore	San Francisco.
O. F. Meldon	San Francisco.
M. F. O'Donoghue	San Francisco.
Henry M. Savage, A. B. (U. C.)	San Francisco.
William Schmidt	Alameda.
Leander Shores	San Francisco.
C. A. Shurtleff	Napa City, California.
J. Angello Spinetti	San Francisco.
William H. Schooler	San Francisco.
W. S. Stone	San Francisco.
C. A. Stonesifer	Berkeley.
George F. Schorr	Berkeley.
Farren Stranahan	San Francisco.
James F. Smith, M. A. (S. C.)	San Francisco.
Robert B. Tappen	Alameda.
R. B. Terry	Stockton.
Samuel Tevis	San Francisco.
B. G. Thomas	San Francisco.
E. B. Thompson	San Francisco.
N. M. Trezevant, A. B. (Y.)	San Francisco.
E. H. Wakeman	San Francisco.
C. A. Webb	Sonoma, California.
John H. Wheeler, Ph. B. (U. C.)	St. Helena, California.
F. P. Wickersham	Petaluma.
Harry T. Williams	San Francisco.
M. S. Wilson, A. B. (Y.)	San Francisco.
George L. Wilson	Alameda.
E. B. Williams, B. S. (U. M. C.)	San Francisco.
Total	62.
Middle Class	95
Junior Class	62
Grand total	155

ABBREVIATIONS OF COLLEGE TITLES.

U. C.—University of California.
H. U.—Harvard University.
Y.—Yale College.
S. C.—Santa Clara College.

St. M.—St. Mary's College, of San Francisco.
St. I.—St. Ignatius College, of San Francisco.
Bdn.—Bowdoin College.
U. M. C.—University Mound College, San Francisco.

GENERAL STATEMENT.

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During the present College year (1879-80), Prof. J. N. Pomeroy will deliver two lectures daily at the Assembly Rooms of the Academy of Sciences, southwest corner of California and Dupont Streets.

The Middle Class meets at 4 p. m. The Junior Class meets at 12:30 p. m. Moot Courts will be held on Saturdays.

ADMISSION OF STUDENTS, ETC.

1. Students will be admitted to either class and fully matriculated only upon furnishing a satisfactory certificate of their good moral character, and paying to the Registrar the sum of ten dollars as a matriculation fee. Applicants for admission to the first or Junior Class must also satisfy the authorities of the institution that they possess sufficient knowledge and culture to enable them to profit by the course of study. Students applying for admission to the Middle or Senior Class must also pass a satisfactory examination in the studies of the preceding year or years, as the case may be.

2. Gentlemen who do not reside in San Francisco, or its immediate vicinity, and who are desirous of availing themselves of the course of study as *non-resident* students, may at any time file their application to be admitted, upon furnishing a certificate of good moral character, and paying the fee of ten dollars. They will then be entitled to attend as many of the lectures, exercises, and examinations as they may desire, but they will not be considered as fully matriculated students of the Middle year until they shall have satisfactorily passed the examinations preliminary to entering upon the proposed advanced class, and are enrolled as actual members of such class in regular attendance.

3. No student shall be entitled to graduate and to receive the diploma from the University unless he shall have been an actual member of the Senior Class, in regular attendance upon its exercises.

CLASSES AND THE ACADEMIC YEAR.

1. The entire course of instruction extends through three academic years, and the school is separated into three classes corresponding to these three years, known respectively as the Junior, Middle, and Senior. The course of instruction in each class occupies one academic year.

2. The academic year is the same as that of the University of California, with the usual holiday recess.

EXAMINATIONS, PROMOTIONS, AND GRADUATIONS.

1. There will be a regular examination at the close of the Junior and of the Middle year, preliminary to promotion into the next higher class. There will also be a regular examination upon all the studies of the course at the close of the Senior year, preliminary to graduation. These examinations will be either wholly in writing, or partly in writing and partly oral, at the discretion of the Professor of Municipal Law. There will also be intermediate examinations

of each class at such times and in such manner as the Professor of Municipal Law shall direct.

2. Members of each of the two lower classes, upon satisfactorily passing the regular examinations at the close of their respective years mentioned above, will be promoted into and become members of the next higher class. Upon being thus promoted into and becoming a member of each higher class, every student will be required to pay to the Registrar the fee of ten dollars, for the purpose of defraying incidental class expenses.

ATTENDANCE, CONDUCT, ETC.

The proficiency and attainments of each student, and his right to promotion and to graduation, are tested by his examinations, taken in connection with the personal knowledge of his character and the knowledge obtained by the Faculty from the intercourse of the classroom.

It is expected that actual matriculated students will regularly attend the stated exercises of school.

During their presence in the class-room, and in their intercourse with the Faculty and other officers of the institution, the students are expected and required to adopt and conform to the conduct, principles, and manners of gentlemen.

The authorities will exercise the right of removing any student guilty of any immoral conduct rendering him unfit for the society of gentlemen.

COURSE OF STUDY.

Junior Year.—In the first or Junior year, the class will go over the fundamental or general principles and doctrines which constitute the frame-work of our jurisprudence in all of its most important departments of primary or substantive rights and duties—embracing the law as to persons and personal rights; the law as to personal property; an outline of the law as to contracts, and the law as to real property, with the exception of trusts, powers, and remainders.

The instruction during the year will be given by means of particular text-books, definite portions being assigned for preliminary examination by the class, with an oral exercise, discussion, or lecture upon such lessons, conducted by the Professor in charge. Reference will constantly be made to the statutory legislation of California and of other States, so far as may be found necessary, and also to leading judicial decisions involving the subject under consideration. Particular instruction will be given in the statutes and local legislation of Oregon, Nevada, and other Pacific States and Territories when necessary, for the benefit of the students from those Commonwealths. In fact the law of California is constantly compared with and illustrated by the law of other States and of England.

In addition to the special text-books used, the class will be recommended to read, in connection with each topic or head of the law under examination, other works in which the subject is more fully treated. It is not expected that each student will read all of these treatises thus indicated for collateral study, or even the whole of any treatise. A list is given from which the members of the class may select, according to their opportunities and the time at their disposal.

REQUIRED COURSE WITH THE TEXT-BOOKS.

Under each head the appropriate titles of the Civil Code are to be carefully studied and expounded.

1. *The Law as to Persons*, including the personal rights of life, limb, liberty, and reputation: citizens, voters, and aliens; the domestic relations, marriage, divorce, husband and wife, parent and child, infants, guardian and ward, master and servant, etc. Kent's Commentaries, Lectures 24 to 32 inclusive.

2. *The Law as to Personal Property*, its nature, kind, mode of acquisition and transfer. Kent's Commentaries, Lectures 34 to 38 inclusive.

3. *Outline of the Law as to Contracts*, including the general doctrines which apply to all contracts. Metcalf on Contracts, and Parsons on Contracts, Vol. I, Book 1, chapters 1 and 2; Book 2, chapters 1 and 2; Vol. II, Part 2, chapters 1, 2, 3, 4, 6, 8, and 9.

4. *The Law as to Real Property*, including all its branches, except uses and trusts, powers, and future contingent estates. Blackstone's Commentaries, Book 2, chapters 1 to 20 inclusive; Washburne on Real Property, Vol. I, chapters 5 to 13 inclusive; Vol. II, chapters 14, 15, and 16; Book 2, chapter 1; Vol. III, Book 3, chapters 1 to 4 inclusive.

OPTIONAL COURSE OF COLLATERAL READING.

History and Development of the Law and its Sources.—Pomeroy's Introduction to Municipal Law.

Personal Rights of life, body, limb, liberty, and reputation, and the torts or wrongs by which they may be violated. See the titles, "Assault and Battery," "False Imprisonment," "Malicious or Wrongful Arrest," "Malicious Prosecution," "Slander," "Libel," and the like, in Bigelow on Torts; Addison on Torts, chapters 12 to 17; Hilliard on Torts, chapters 5 to 16; Waterman on Trespass, Book 2, chapters 1 and 2; Bigelow's Leading Cases on Torts, titles: "Assault and Battery," "False Imprisonment," "Malicious Prosecution," "Deceit."

Slander and Libel.—See Townshend on Slander and Libel; Starkie on ditto; Smith's Leading Cases, titles, Libel, Slander, Damages; American Leading Cases, same titles; Bigelow's Leading Cases on Torts, same titles.

Marriage and Divorce.—See Bishop on Marriage and Divorce; Schouler's Domestic Relations.

Husband and Wife, Parent and Child, Infants, etc.—See Schouler's Domestic Relations; Reeve's Domestic Relations; Bingham on Infancy; Parsons on Contracts, Vol. I, chapter 17, on Infants; Bishop on Married Women's Property; Smith's Leading Cases; cases of Manby v. Scott, on Husband's Liability for Wife's Contracts; American Leading Cases, title Infancy.

Personal Property.—See Williams on Personal Property; Belknap on Probate.

Contracts.—See Langdell's Select Cases on Contracts, and portions of Smith, Chitty, Story, or Addison, on Contracts.

Real Property.—See Smith's Leading Cases; case of Elwes v. Mawes on Fixtures; Williams on Real Property; Kent's Commentaries, Lectures on Real Property; Washburne on Easements, and Jones on Mortgages.

MIDDLE YEAR.

In the second or middle year the class is no longer confined to particular text-books, nor definite lessons. In commencing each important subject (*e. g.* Corporations or Agency, etc.) the class will be furnished with a printed syllabus of the lectures to be given on that topic. This syllabus states in outline the matters to be discussed in each lecture, and the various text-books and treatises, with a reference to the chapters or sections, where the questions are treated, and to the appropriate titles and sections of the Civil Code. It also gives the "leading cases," English and American, and also cites the subsequent, most important decisions, in which the principles have been explained, extended, limited, or applied. The class is expected to study by the direction of this syllabus, to read some one or more of the text-books referred to, and especially to study the judicial decisions which are cited. The class will thus be prepared for the oral examination and discussion by the Professor in charge, which are based upon the outline contained in the syllabus. As each syllabus will mention all the standard writers who may be profitably consulted by the class, in connection with each topic, no list of works for collateral reading is here given. The Statutes of the State are constantly referred to and studied.

The course of study embraces a full treatment of mercantile and commercial law, corporations, agency, partnership, sale, bailments, bills and notes, insurance, shipping contracts, suretyship, etc. Certain heads of real property law, viz.: Remainders, executory devises, trusts and powers; last wills and testaments, and the administration of the estates of deceased persons; equity jurisprudence, and torts.

SENIOR YEAR.

In the third or senior year the course of study contemplates two distinct objects: First, the practical application of the substantive doctrines of the law, which have been studied during the former two years; and second, the giving to the class a more complete and perfect acquaintance with all the departments of jurisprudence than is possible to within a period limited to two academic years.

In accomplishing the first of these objects, those branches will be pursued which constitute the remedial portion of the law.

It includes pleading and practice, according to the reformed system of procedure, together with the general theory of common law forms of action, and of common law and equity pleading, and the law of evidence.

The text-books, to which attention will be particularly directed, are Pomeroy's Remedies and Remedial Rights; Pleading and Practice under the California Code of Procedure; Stephens on Pleading; Gould on Pleading; Lubé Equity Pleading; Greenleaf on Evidence; Wharton on Evidence.

The second general object will be accomplished by instruction in the following subjects: Constitutional law of the United States and the State; International law, public and private; Medical Jurisprudence; Roman Law and General Jurisprudence; the Principles of Morality in their application to the Law and to its Practice; Criminal Law; and it is hoped Admiralty Law and Patent Law.

MOOT COURTS.

A Moot Court will be established, as a regular mode of instruction, for the argument of causes and the discussion of legal questions by members of all the classes.

ACT OF THE LEGISLATURE ESTABLISHING HASTINGS COLLEGE OF THE LAW.

[Approved March 28, 1878.]

AN ACT TO ESTABLISH HASTINGS COLLEGE OF THE LAW IN CALIFORNIA.

SECTION 1. That S. C. Hastings be authorized to found and establish a Law College, to be forever known and designated as "Hastings College of the Law."

That the officers of said College shall be a Dean, Registrar, and eight Directors. That the Directors shall be Joseph P. Hoge, W. W. Cope, Delos Lake, Samuel M. Wilson, O. P. Evans, Thomas B. Bishop, John R. Sharpstein, Thomas I. Bergin, of the Bar Association of the City of San Francisco, who shall, when vacancies occur, fill the same from members of said Association or otherwise, and shall always provide for filling a vacancy with some heir, or some representative of the said S. C. Hastings.

That the Dean and Registrar shall be appointed by the Directors.

SEC. 2. Said College shall affiliate with the University of the State upon such terms as shall be for the welfare of the College and University, and shall be the Law Department of the University.

SEC. 3. The Faculty of the University shall grant diplomas to the students of the College, and the President shall sign and issue the diplomas.

SEC. 4. There shall be set apart for the use of the students of the College, some room or suitable hall at the University; and the Board of Supervisors of the City of San Francisco is authorized to supply a suitable hall in the City of San Francisco for the students and Directors.

SEC. 5. The Dean of said College shall be *ex officio* one of the Faculty of the University, to be designated as such by the Directors of the College.

SEC. 6. The diploma of the students shall entitle the student to whom it is issued to a license to practice in all the Courts of this State, subject to right of the Chief Justice of the State to order an examination, as in ordinary cases of applicants without such diploma.

SEC. 7. This Act is passed upon the condition that said S. C. Hastings shall pay into the State treasury the sum of \$100,000, and is never to be refunded, except as hereinafter provided.

SEC. 8. The sum of seven per cent. per annum upon \$100,000 is to be appropriated by the State and paid in two semi-annual payments to the Directors of the College.

SEC. 9. The business of the College shall be to afford facilities for the acquisition of legal learning in all branches of the law; and to this end shall establish a curriculum of studies, and shall matriculate students who may reside at the University of the State, as well as students residing in other parts of the State.

SEC. 10. Professorships may be established in the name of any founder of such Professorships who shall pay to the Directors the sum of \$30,000.

SEC. 11. All the business of the College shall be managed by the Directors without compensation. And all officers acting, including the Dean and Registrar, shall be appointed by the Directors and removed by them.

SEC. 12. The Law Library Association of the City of San Francisco shall grant to the students the use of their library upon such terms and conditions as they may agree with the Directors of the College.

SEC. 13. The object of this Act being to grant a perpetual annuity for the support and maintenance of said College, should the State or any government which shall succeed it fail to pay to the Directors of said College the sum of seven per cent. per annum as above stipulated, or should the College cease to exist, then the State or its successor shall pay to the said S. C. Hastings, his heirs or legal representatives, the sum of \$100,000, and all unexpended accumulated interest; *provided*, that such failure be not caused by mistake or accident, or omission of the Legislature to make the appropriation at any one session.

SEC. 14. That the Chief Justice of the Supreme Court of the State, or if there be no such officer of that name, the chief judicial officer of the State or government, shall be the President of the Board of Directors, five of whom shall be a quorum to transact all business.

GENERAL MATTERS.

MEETINGS OF REGENTS.

The Board has met twelve times during the year ending June 30th, 1878, at four regular, three adjourned, and five special meetings, and sixteen times during the year ending June 30th, 1879, at four regular, four adjourned, and eight special meetings, an increase of four meetings over the preceding year. This does not include the meetings of the committees, which are frequently held, as the business needs of the University require.

CHANGES IN THE REGENCY.

On the 17th of January, 1877, Mr. John L. Beard was appointed Regent, succeeding Mr. J. M. Hamilton, term expired. In the following March Mr. A. S. Hallidie, having resigned the Presidency of the Mechanics' Institute, ceased to be Regent. Mr. Irving M. Scott succeeded to the Presidency of said association March 26th, and consequently ex officio to the Regency. Subsequently, on the 4th of April, Mr. Hallidie was appointed Regent (vice Mr. William Meek, term expired) for the period of sixteen years, or until March 1st, 1893.

On the 23d of January Honorable Marion Biggs, Regent ex officio, as President of the State Agricultural Society, was succeeded by Marcus D. Boruck, Esq., by virtue of the latter's election to the Presidency of said society.

The subsequent changes in the *personnel* of the Board are the succession of Mr. H. M. Larue, vice M. D. Boruck, ex officio, as President of the State Agricultural Society, and of Honorable C. P. Berry, ex officio, as Speaker of the Assembly, vice Honorable G. J. Carpenter.

MECHANIC ARTS COLLEGE BUILDING.

The above building, for the construction of which an appropriation of \$40,000 was made by the Legislature (twenty-first session), was completed about the middle of December, 1878. It is a well built and substantial edifice, and well adapted for the purposes for which it is required.

The architect was Mr. A. A. Bennett; contractor, Florence Crowley; superintendent of construction, Robert McKillican.

The appropriation has been expended as follows, as per demands audited by the Regents and subsequently by the State Board of Examiners:

Advertising for plans	\$58 25
Premium for plan	250 00
Advertising for contract	119 50
Construction, amount of payments to contractor	34,041 00
Salary superintendent of construction	2,200 00
Architect's commission, steam engine, etc.	1,698 90

Of the appropriation of \$10,000 made at the last (twenty-second) session of the Legislature for the equipment of the Mining College, etc., \$6,740 41 has been expended for permanent and other fixtures and furniture, leaving, at the date of this report, \$3,259 59 for the erection of furnaces, machinery, etc.

IMPROVEMENT OF THE UNIVERSITY GROUNDS.

During the first twelve months of the term covered by this report the continuation of the walks, paths, etc., also of the flower beds and the planting out of shrubs, trees, etc., in pursuance of the previous year's work, was continued, as well as the maintenance of the grounds previously improved. Besides the above, the grading and leveling of the campus to the west of the main buildings, so as to make the ground available for a parade and drill-ground for the battalion and for a play-ground for the students, was completed. This latter required considerable labor, as it had to be plowed, replowed, and under-drained before final leveling.

The small amount of the monthly allowance for the improvement of the grounds, and the fact that the State has never made any appropriation for this purpose, together with the area which requires improvement, causes the progress of the work to appear rather slow; nevertheless it is diligently pushed and a great deal has been accomplished under the circumstances.

During the last half of the biennial term included herein the grading of the ground immediately adjoining the main buildings has been commenced and good progress has been made; when completed, and the main terrace and roadways are connected with the improvements previously made, the effect will be exceedingly fine, and the excellence of the general design or plan under which the whole has been pursued will be at once apparent. While this terrace work and grading has been going on it has been impossible to carry out, with our limited means, the laying or planting out of other portions of the University domain.

WATER SUPPLY.

In the matter of the water supply it may be remembered that the Legislature of the State (twenty-first session) passed "An Act to supply water to the University and the Deaf, Dumb, and Blind Asylum." Said Act authorized the condemnation of the springs within the distance of one and one-half miles of the University grounds. In pursuance of the above, and of the request of the Attorney-General, the mountain land so-called east of the University grounds was surveyed, and the portion containing the springs properly defined and plotted, and a map thereof forwarded to General Hamilton; recently the — District Court has appointed a commission or referees to examine and determine values under the proceedings for condemnation, etc.

At the last session (twenty-second) the Regents asked for an appropriation to enable the construction of reservoirs, etc., and the necessary piping, etc. The Legislature regarded the appropriation with favor, and made an appropriation of \$22,000; the bill which included the above item failed, however, to receive the approval of the Governor.

PERPETUAL ENDOWMENT FUND, ETC.

An Act to consolidate and perpetuate the various funds and endowments for maintenance of the institution, and making the Treasurer of the State the authorized and responsible custodian thereof, was also passed and "approved March 19th, 1878." This most important law includes:

SECTION 1. That the entire principal sums which have been or may hereafter be realized from the several sources of Income and Endowment Funds of the University of California,

to wit, the principal sum derived from the sale of lands granted to the State of California by Act of Congress, approved July 2d, 1862, and amendments thereto, and the principal sum derived from the sale of the seventy-two (72) sections of land granted to the State of California for the use of a Seminary of Learning, by Act of Congress, approved March 3d, 1853, and the principal sum derived from the sale of the ten sections of land granted to the State of California for public buildings by said Act of Congress, approved March 3d, 1853, and the principal sum which the Treasurer of the State of California was directed, by Act of the Legislature, approved April 2d, 1870, to place to the credit of the University Fund, and which, being invested in the bonds of the State or of the United States, should yield an annual income of \$50,000, and the principal sum now remaining on hand derived from the sale of real estate in Oakland, Alameda County, and State of California, known as the "Brayton Property," shall be from time to time, as the same is realized, invested in stocks of the United States or of the State, or other safe stocks or bonds, yielding not less than five (5) per centum upon the par value of said stocks or bonds, and the money so invested shall constitute a perpetual fund, to be known and designated as the "Consolidated Perpetual Endowment Fund of the University of California," the capital of which shall remain forever undiminished; *provided*, that any moneys realized from said sources of Income or Endowment Funds, or either of them, which have been heretofore invested according to law, may remain so invested; *and it is further provided*, that all such stocks and bonds as aforesaid shall be deposited in the State treasury to the credit of said fund, and shall be kept separate and apart from all other funds by the State Treasurer, who shall pay over from time to time all interest, profits, income, or revenue arising from such stocks or bonds to the Treasurer of said University upon the demand or order of the Regents of the University.

SEC. 2. That all interest, profits, or revenue arising from or growing out of the said "Consolidated Permanent Endowment Fund of the University of California," shall be placed in the General Fund of the University, and subject to disbursement to meet the current annual expenses of the University of California.

SEC. 3. That all Acts or parts of Acts in conflict herewith are hereby repealed.—[Statutes, 1877—8, p. 337.

In pursuance of the foregoing the Board, at a meeting held on the 30th of April, approved the resolution submitted by the Finance Committee, under which the Secretary was instructed to proceed to Sacramento and deposit with the State Treasurer the various stocks and bonds in the hands of the Treasurer of the University, and to receive from the State Treasurer his receipt for the same. Accordingly, to wit, on Tuesday, the 22d of May, 1878, the Secretary of the Board and Mr. S. P. Smith, the private secretary of Treasurer Mills, proceeded to Sacramento and deposited with the Honorable J. G. Estudillo, State Treasurer, bonds as enumerated and described in the receipts signed by the latter to the amount of \$386,500, to the credit of said "Consolidated Perpetual Endowment Fund of the University of California." Said receipts were given in duplicate, one being in the possession of Treasurer Mills, the other in the office of the Secretary of the University. Subsequently the further amount of \$46,000 in bonds have been deposited, in conformity with the requirements of the Act, with the State Treasurer, making the total amount of bonds purchased by the Regents and deposited with the State Treasurer, for account of the "Consolidated Perpetual Endowment Fund of the University of California," on the 30th day of June, 1879, par value, \$432,500, at the cost of \$428,360 17, receipts for which were given by the State Treasurer to each, the Treasurer and the Secretary of the University, and on file in their respective offices.

The following gives the amount (par value) of the bonds deposited to the credit of said fund and the sources from whence derived, which constitute the "Consolidated Perpetual Endowment Fund of the University of California:"

State Endowment—From proceeds of sales of salt marsh and tide lands (see Act approved April, 1870), claimed to be of the par value of	\$811,500 00
United States Endowment—Investment from sales of agricultural lands by the Regents	384,000 00
Seminary Land Fund—Investment by Regents	19,000 00
Brayton Real Estate Fund—Derived from sales of Oakland property formerly used by the University, invested by the Regents	29,500 00
Total	\$1,244,000 00

Another matter of great interest, relating to the funds of the University, is the passage of "An Act to create a commission to examine and report the condition of certain funds," approved April 1, 1878. (See Stat. 1877-8, p. 928.) Under this statute an inquiry can be made into the management and sale of the seventy-two sections of Seminary lands and the ten sections of Public Building lands and the disposition of the receipts from sales. These lands, unlike those of the Congressional grant of July 2d, 1862, were not managed by the Regents. As they constitute a part of the endowment of the University, it is highly important to know the condition of these grants, the quantity of land sold and unsold, the amount received, and what became of it. The above Act appoints as Commissioners the State Controller, the Surveyor-General, and the State Treasurer; these officers, through their friendly interest in the University, kindly consented to perform the duties pertaining to the Commission; on the recommendation of the Finance Committee, Mr. J. Ham Harris was detailed to render such assistance from time to time as the Commissioners may require.

In November, 1877, H. D. Bacon, Esq., of Oakland, addressed the Regents, through Mr. Regent Martin, and announced his intention of giving to the University his "valuable collection of works of art, sculpture, and paintings, and a library of several thousand volumes of standard and miscellaneous works, together with \$25,000 in money, provided the State will appropriate a like sum at the next meeting of the Legislature, to be used conjointly in erecting the first subdivision of the building, to be dedicated to the purposes of a repository for a vast library and galleries for the exhibition of the æsthetic arts." Subsequently the Board prepared a proper memorial and presented the same to the Legislature, at the last session, to meet the condition required by Mr. Bacon of the State. The appropriation asked for was obtained by a special Act, approved April 1st, 1878, and the amount awaits the action of Mr. Bacon and the Board. Several plans are now being examined by the proper committee of the Board, which were received in response to its advertisement offering a premium of \$250 for the one accepted.

SPECIAL APPROPRIATION—COLLEGE OF AGRICULTURE.

Of the special appropriation of \$10,000 made at the twenty-second session of the Legislature for the College of Agriculture (Statutes, 1877-8, p. 1,008), \$4,606 18 has been expended, leaving a balance of \$5,393 82.

DENNIS JORDAN'S CLAIM.

In reference to certain alleged claims of Dennis Jordan, for labor and materials on the College of Agriculture building, so-called, and which claims were, by Act of the Legislature, referred to the Board of Regents to determine the amount equitably due to Jordan, and to

report accordingly to the State Board of Examiners; the matter was referred to various committees of the Board, and received careful consideration, and the final report, recommending that the Regents certify to the State Board of Examiners that the amount equitably due Jordan was \$4,705 46, was adopted November 4th, 1878, and the Secretary was instructed to certify said amount as above, in pursuance of the Act referred to.

STATE GEOLOGICAL SURVEY.

The agency of the sale of the publications of the late survey has been continued as heretofore, with Messrs. Payot, Upham & Co., of San Francisco, and the sales for the two years have netted \$355 25, which has been collected and paid into the State treasury, as per receipts on file in the Secretary's office.

Certain specimens of shells, at the date of the last report, in the hands of Dr. P. P. Carpenter, of Montreal, which were permitted to remain a short time longer in his possession, for further investigation, have, since his death, been returned, and are now in the University Museum.

The following, ordered shipped to California some months ago, have been received:

"At Welch, Bigelow & Co.'s, Cambridge, Massachusetts, Ornithology, Vol. I, in sheets, 506 copies; Yosemite Guide-Book, 8-vo, sheets, 492 copies; Palaeontology, Vol. II, in sheets, 114, and bound, 23 copies.

"At Little, Brown & Co.'s, Boston, on sale—Geology, Vol. I, 17 copies; Ornithology, Vol. I, 85 copies; Palaeontology, Vol. I, 25 copies; same, Vol. II, 9 copies; Yosemite Guide-Book, 8-vo, 33 copies; same, 16-mo, 27 copies."

[MEMO.—Quoted from Professor Whitney's Inventory to the Governor, 1874.]

Of the material referred to as in possession of Welch, Bigelow & Co., and Little, Brown & Co., as above, it appears from the statement of Professor Whitney that a portion of the same, 100 copies of each publication, were delivered to the then Secretary of State, on the demand of said official, and that the result of sales for publication was used to pay for binding said copies, and for insuring the lithographic stones in the hands of Julius Bien, of New York.

These facts should be borne in mind, as the Regents, as custodians of the material and accountable for the same, cannot justly be held for what was never in their possession, or for transactions to which they were not a party, and of which they had no knowledge until after the fact. And further, as a matter of record, it should be known that no invoice was furnished the Regents of the material belonging to the survey at the time of its suspension.

The specimens of all kinds collected by the survey are, under the law, the property of the University.

At a meeting on the 4th day of September, 1877, the following resolutions, contained in the report of a special committee on the matters of the Geological Survey, were adopted by the Board:

Resolved—That Professor J. D. Whitney be requested to make a statement to the Board of Regents of the interests and affairs of the Geological Survey since March 27th, 1874, and of the discharge of his duties as custodian of the property and work of the same, and that the Secretary be and he is hereby instructed to request Professor J. D. Whitney to make said statement.

Resolved—That Professor Whitney be permitted to use such data, notes, maps, drawings, etc., belonging to the Geological Survey as may be necessary to publish further volumes relating to

the Geology and Natural History of California, the cost of the publication of such volumes to be without expense to the State.

Professor Whitney's reply to the first of these resolutions is appended hereto:

REPORT OF PROFESSOR J. D. WHITNEY.

To the Honorable the Board of Regents of the University of California:

GENTLEMEN: At an early period of the legislative session of 1873-4 a joint committee was appointed to investigate the affairs of the Geological Survey. This committee visited the office and made quite a thorough examination of the work. To aid them in this, a written statement was submitted by the State Geologist, with an inventory of the property. The committee was also furnished with proof-sheets of the work in hand, proofs of all the maps in the process of engraving, and with every other kind of information asked for. The result was, that the committee made a favorable report, recommending the completion of the survey on the plan proposed by the State Geologist, and which involved an expenditure of \$100,000, in addition to what had been already appropriated, the entire work to be completed and published by the end of June, 1875, comprising eleven volumes of text, and an atlas of maps and sections.

In view of the favorable report of this specially appointed committee, the State Geologist did not consider himself called on to discontinue the work under his charge, although the amount of the previous appropriation had been slightly exceeded by the expenditures before the end of the session. It was impossible, in any other way than by stopping some departments of the survey altogether, to limit the expenditures to a precise sum per month.

In spite of the recommendation of the committee, the Legislature took unfavorable action on the survey; and just at the close of the session, in 1874, the State Geologist was ordered to turn over the property in his charge to the Regents of the University. No provision was made for the payment of the debts of the survey, or for settling up its affairs, nor was any committee authorized to attend to the business of the transfer. The action of the Legislature was entirely unjust and unbusiness-like. Charges of dishonesty were made against the State Geologist, and no chance was offered him of refuting them, as he might easily have done with a few days' notice. It was evidently the intention of the enemies of the survey that these charges should be sprung just at the close of the session, when there was no opportunity for reply, it being evident that no opposition based on truth would have any chance of success.

Immediately on the passage of the resolution demanding a transfer of the property of the survey to the Regents of the University, all the collections, materials, and instruments at the office of the survey were removed to Berkeley. There remained at the East the stock of publications, electrotype plates, etc., in the hands of different parties, an inventory of which property, as it stood at the beginning of the session, had been given to the Committee of Investigation. There were also materials in process of publication, and of preparation for publication, in the hands of the various collaborators of the survey, awaiting the necessary appropriations for their complete working up, so they could be placed in the printer's hands.

The State Geologist found himself in an exceedingly embarrassing position. There were considerable debts incurred on account of the survey, for which he was personally liable, and for the payment of which no provision had been made by the Legislature, the Board of Examiners even withholding a part of the appropriation made by the previous Legislature, and which had been expended in conformity with the law. As the Governor even refused to answer letters of respectful inquiry addressed to him on this subject by the State Geologist, the latter had no resource except to appeal to the Board of Regents. An appropriation having been made by the Legislature, which had just adjourned, to enable the Regents to get possession of and transfer the property of the survey to Berkeley, the State Geologist made application for the appropriation of a part of the unexpended balance of this sum for the purpose of paying the principal one of the debts of the survey, namely, that due Mr. Julius Bien, of New York, for engraving and printing maps. To prevent these maps from passing into strange hands or being erased from the stones was one of the chief objects of the solicitude of the State Geologist. After more than a year's delay this was at last effected, the Regents appropriating the necessary sum to pay the debt.

To show the uncertainty and fickle disposition of the Legislature, it may be mentioned that a bill appropriating a sufficient sum for the completion of the Central California map—\$16,000, if the memory of the writer is not at fault—only lacked one vote for passing the Assembly, a bill for this purpose having been introduced after the general bill had failed.

After the return of the State Geologist to the East, in 1874, he immediately began to exert himself to prevent the unpublished material above referred to from being lost. A large amount of correspondence was carried on for the purpose of informing people as to the condition of the work, in the hope of procuring means from private parties for its continuance.

The small edition of the Yosemite Guide-Book being out of print, it was considered desirable that a new one should be issued, as this was one of the publications of the survey always in demand, and, if not supplied to the public, it was likely to be reprinted by outsiders. A proposition was made by the writer to the Regents to take the responsibility of preparing a new edition, the book needing to be rewritten in part. The Regents declining this, the writer prepared and published a new edition, from new plates, as he was fully authorized to do, or as any one else could have done without possibility of interference. A large edition of this volume

was published, and the copies are sold at very nearly their cost, it not being the object of the author to make anything from the sale. The sale of the whole edition of two thousand copies will just about repay the cost of the plates.

Application was also made by the late State Geologist to publish a volume of geology, without expense to the State, and this application was favorably acted on by the Regents, such permission having been granted. Some progress has been made in the preparation of this volume, and, of the various matters which it was expected that it would contain, one of the most important was the results of the barometrical observations for altitude taken in various parts of the State, and especially in the Sierra Nevada, at different times during the progress of the survey. This barometrical work is now, and has been for some time, in process of examination and reduction. Tables have been computed for corrections of barometrically determined elevations in California, and these are now being used in working over the results obtained in the Sierra Nevada. These tables have been electrotyped and a few copies printed for computers' use, and the work when completed will form an important contribution to the science of meteorology and to the physical geography of the State.

Some progress has been made in the engraving necessary for the volume of geology authorized by the Regents in 1874, but, it having been found that one volume would be inadequate to hold the desired work, the matter was laid aside until the consent of the Regents could be obtained to a more extensive publication. This having been now secured, the following plan has been adopted: In the first place, a volume will be published devoted to the Auriferous Gravel Deposits of the Sierra Nevada. This volume will contain the work of Mr. Lesquereux, descriptive of the fossil plants found in the fresh-water tertiary of the Sierra. For this the plates have been engraved and the manuscript ready for the press. As this volume will be quite an expensive one, costing to electrotypes and print six hundred copies not less than \$6,000, I have obtained some assistance from the Museum of Comparative Zoology, which will pay a portion (about half, it is reckoned) of the expense of the volume, on condition of receiving three hundred copies of the same for exchange. The other copies will be sold at \$10 per copy, and there is nothing in this arrangement which will prevent the State or the University taking possession of the electrotypes on paying for the same. In making this arrangement, I have followed the example of the Kentucky survey in the publication of Mr. Allen's paper on the Buffalo.

Another volume, which was in progress at the time the survey was stopped, is one which is intended to contain the geology, and especially the economic geology, of the Coast Range. Of this volume about one hundred pages were in type at the time of the stoppage of the survey, and nearly a hundred more have since been set up and electrotyped. As soon as suitable and competent assistants can be obtained to make the—if not necessary, at least very desirable—re-examination of certain districts where a large amount of work had been done since 1874, the volume will be completed. Still a third volume, containing a working up of the geology of the Sierra Nevada, is in contemplation, provided the strength and means of the writer enable him to accomplish so much.

The most desirable thing in connection with the whole work would be the completion of the map of Central California. Of this three sheets are already finished, the map being comprised in four. The sheet not finished is the northwestern quarter of the map, and it comprises the region in the Coast Ranges north of Clear Lake. On the engraving of this map alone over ten thousand dollars has already been expended, besides several times that amount in the necessary field-work and drawing. The whole map is fully four-fifths completed, but as one season's more field-work is necessary before the northwestern sheet can be completed, it is quite beyond the private means of the writer to accomplish it, and this most desirable and admirable piece of work must remain *in statu quo* until the Legislature shall see fit to order it completed, unless private parties should in the mean time see fit to lend their aid.

That such aid is not impossible is sufficiently proved by what has taken place with the botany of the survey: several gentlemen, whose names will be found on the third page of the volume itself, having contributed five thousand dollars for that purpose. The first volume of this part of the survey work has been issued. The cost of the volume, which comprises about six hundred pages, and which has been electrotyped, was about six thousand dollars, and the excess of cost above the sum subscribed has been refunded from the proceeds of the sale of the volume. A small sum above this, received from the sale, has been applied to the second volume. The first edition of the first volume, which was of three hundred and fifty-six copies, has been nearly all sold. Should a second edition be published, the sale of two thousand five hundred copies would be necessary in order to reimburse to the subscribers the amount of their original outlay, the present selling price of the volume (four dollars per copy to the trade and six dollars at retail) paying, now that the stereotype plates have been paid for, a profit of two dollars on each copy sold. A subscription list of two thousand five hundred dollars has also been placed in the hands of the writer, the proceeds of which are to be applied to the second and concluding volume of the botany, the work on which has been progressing for several months, in charge of Mr. Watson, assisted by Dr. Engelman, Mr. Thurber, Professor Eaton, and others. It is a matter of congratulation that this important part of the work has been saved from destruction.

Nothing has been done with reference to the ornithological volume, yet required to complete that part of the work. The cuts are all finished and in the hands of Professor Baird, there being a balance of several hundred dollars due him on account of the cost of engraving. It is much to be desired that the ornithology should be completed, especially as that portion of the work which remains unfinished—that relating to the water-birds, namely—is extremely inter-

esting; and the cuts which have been prepared for it, and which have cost the State several thousand dollars, are most beautifully executed.

The sale of the publications of the survey has been continued by Little, Brown & Co., of Boston, the Regents not having signified any desire of a change in this respect. So large a number of geological books are now published and distributed all over the country gratuitously by the general government—many thousands of copies every year—that there is little sale for any official geological publications. The great object is attained, however, when copies of these publications are known to be on sale, at moderate prices, and to be capable of being had at any time by those who really need them.

The entire proceeds of the sales, as reported by Little, Brown & Co., up to June 30th, 1877—since April 25th, 1874—have been three hundred dollars.

There has been paid out, on account of the survey since the last settlement with the Board of Examiners, June 1st, 1874, the sum of \$340 78, namely, \$177 78 for binding, and for insurance for two years, 1874, 1875, in the sum of \$5,000 on the lithographic stones in New York, \$132, making in all the sum of \$309 78. The binding was executed in order to fill an order from the Secretary of State for a large number of copies of the different volumes, claimed by him to be at his disposal, in accordance with a pre-existing law, authorizing the distribution of one hundred copies of each published volume of the survey by the Executive of the State. To this demand by the Secretary of State, the ex-State Geologist replied, claiming that under the present law the custody of the volumes belonged to the Regents of the University, and demanding authorization from them or from the Attorney-General before delivering the volumes. To this reply was made by the Secretary that the law was perfectly clear on the subject, and that no authorization from the Board of Regents was needed. The result was that the ex-State Geologist considered it his duty to deliver the required volumes, and to have them bound so that they could be used.

The number of the different volumes on hand at present is as follows:

Geology, Volume I, at Sherman & Company's, Philadelphia, 125 s.
 Geology, Volume I, at Little, Brown & Company's, Boston, 4 b.
 Paleontology, Volume I, at Sherman & Company's, 398 b.
 Paleontology, Volume I, at Little, Brown & Company's, 11 b.
 Paleontology, Volume II, at Welch, Bigelow & Company's, 84 f.
 Paleontology, Volume II, at Little, Brown & Company's, 2 b.
 Ornithology, Volume I, at Welch, Bigelow & Company's, 500 s.
 Ornithology, Volume I, at Welch, Bigelow & Company's, 22 f.
 Ornithology, Volume I, at Little, Brown & Company's, 64 b.
 Yosemite Guide-Book, 800, at Welch, Bigelow & Company's, 316 f.
 Yosemite Guide-Book, 800, at Little, Brown & Company's, 17 b.

(S, in sheets; f, folded; b, bound.)

So far as the bottom of the preceding page was prepared some two months ago, and the document would have been forwarded at that time, but it seemed desirable that a statement should be had from Professor Baird, in regard to the status of the remaining portion of the ornithological work. He was, at that time, absent from the country. As soon as he returned, however, personal application was made to him for a statement, which has only just been received, and which is here appended, in a condensed form.

The total number of cuts required to illustrate the remaining part of the ornithology, water-birds, is five hundred and thirty-three, or of full length figures, one hundred and twenty-eight; of heads, four hundred and five.

The total cost of these figures will be	\$3,561 00
Already done and paid for	2,650 24
Balance required	910 76

Of which \$261 has already been advanced by Professor Baird.

The cost of each full-length is \$12; of each head, \$5.

The work has been most beautifully done, and the cuts are now in possession of Professor Baird, to whom a balance of two hundred and sixty-one dollars is now due, as per statement above. The writer proposes to make an effort to raise the money to complete this magnificent and much desired work, and will endeavor to ascertain what the cost of the printing will be, and what amount of money will be required to complete the ornithological volumes.

The above statement is respectfully submitted to the Board of Regents, with the request that the writer may be furnished with instructions by them on any point in regard to which, in their opinion, further directions are needed.

J. D. WHITNEY.

Cambridge, Massachusetts, December 5th, 1877.

The insurance of the lithographic stones (in the care of Mr. Julius Bien, of New York), upon which are certain drawings of maps, has been continued in the same amount as heretofore, viz., \$6,000. Of the appropriation made by the Legislature, under the special Act of March 27th, 1874, for the preservation of the material of the Survey,

there remains \$505 88 to the credit of the same on the books of the Secretary's office.

THE LICK ENDOWMENT

For the establishment of an observatory and telescope, designed by the giver to constitute the Lick Astronomical Department of the University of California, remains in *statu quo*; the estate, or rather the Lick Trust, being delayed by litigation.

THE TOMPKINS ENDOWMENT

Of the Agassiz Professorship of Oriental Languages and Literature is represented by certain lands between Oakland and Berkeley. These lands have not as yet reached a price sufficient to warrant a sale, and enable the carrying out of the conditions of the gift.

BENEFACTORS AND BENEFACTIONS.

The period under review has been a notable one in the history of the University in the matter of benefactions, especially the last year.

THE HARMON GYMNASIUM.

About the middle of October, 1878, Mr. A. K. P. Harmon, of Oakland, intimated to the authorities of the University his intention to erect, at his own expense, an appropriate building for a gymnasium, so planned as to be of service upon public occasions as an auditorium, etc. After an inspection of the University site by the Committee on Buildings and Grounds and Mr. Harmon, the spot designated on the plan of the grounds for an Assembly Hall was finally selected, the same being acceptable to Mr. Harmon, and the construction of the building at once commenced and vigorously prosecuted, under the charge of Mr. Robert McKillican. The building, an exceedingly neat and substantial structure, was completed about the middle of January, and formally presented to the Board on the 20th of said month by the generous donor, who, at the same time, presented paid up policies of insurance thereon for the term of three years.

As may be supposed, the gymnasium at once became a recreative and healthful resort for the students, under suitable restrictions and the general control of a special committee, consisting of members of the Faculty and students. The celebration of the last commencement was held in the building.

PORTRAIT OF THE HONORABLE H. H. HAIGHT.

On the 9th of December the University was made the recipient of a portrait of the late ex-Governor and ex-Regent Henry H. Haight, painted by Cogswell, and presented by several gentlemen—J. Mora Moss, D. O. Mills, Thomas H. Blythe, Alfred A. Cohen, Freeborn, and Eastland, J. West Martin, and W. W. Crane, Jr.

The thanks of the Board were given for the appreciative and appropriate gift. The picture has been placed in the Assembly Hall, between the pictures of Agassiz and Tompkins.

MECHANICAL EXAMPLES.

W. T. Garratt, Esq., whose considerate liberality has before benefited the University, again generously remembered the Department of Mechanical Instruction, and in December presented a numerous

and valuable series of mechanical examples and parts of machinery, for which the Board expressed its thanks by a special resolution.

THE REESE LIBRARY FOUNDATION.

The late Michael Reese, who, during his life, was a benefactor of the University, the institution being indebted to him for the Lieber Library, left a provision in his will giving to the University the sum of \$50,000, as a foundation for "the Reese Library of the University of California."

The conditions of this gift are as follows: "I give and devise to the corporation known as the Regents of the University of California \$50,000, to be by them invested in the founding and maintaining a library, to be known and called the Reese Library of the University of California."

At the last meeting of the Board a communication, dated May 29th, 1879, was received from Nathan Newmark, Esq., attorney-at-law, an alumnus of the University, offering through his interest in his Alma Mater to collect the legacy for a merely nominal fee. The proposition of Mr. Newmark was accepted by the Regents, under the supervision of the Finance Committee of the Board. In order to obtain the payment of the legacy before the general settlement of the estate, a formal bond was required as a measure of protection by the executors, which, as drawn in the usual form, was signed by the Secretary in his official capacity, and by friends of the University, William Alvord and Andrew J. Moulder, Esqs., as bondsmen.

On the second day of July the amount of the bequest was paid into the hands of Regent Mills, the Treasurer, and the proper account will be opened to the credit of the same in the books of the Secretary's office.

DR. COGSWELL'S ENDOWMENT.

On the 11th of April, 1879, Dr. H. D. Cogswell addressed the Board, requesting the appointment of a committee to confer with him for the purpose of receiving a donation of real estate as an endowment or foundation for a College of Dentistry.

The character and conditions of this endowment may be better understood from the copy of the following documents, which have been exchanged between the parties thereto:

DEED BETWEEN H. D. COGSWELL AND THE REGENTS OF THE UNIVERSITY OF CALIFORNIA.

This indenture made the 19th day of May, in the year of our Lord 1879, between Henry D. Cogswell, of the City and County of San Francisco, State of California, the party of the first part, and The Regents of the University of California, an institution duly created, organized, and existing under the laws of the State of California, and by said laws placed under the charge and control of a Board of Directors known and styled as the Regents aforesaid, the parties of the second part, witnesseth: That the said party of the first part for and in consideration of the sum of five dollars, to him in hand paid by the said parties of the second part, the receipt whereof is hereby acknowledged, hath bargained and sold, and by these presents doth bargain and sell forever unto the said parties of the second part and their successors, all that certain lot, piece, or parcel of land situate, lying, and being in the City and County of San Francisco, State of California, and particularly described as follows, to wit: *Commencing* at a point on the easterly line of Front Street, distant sixty (60) feet northerly from the northeast corner of the intersection of Front and Jackson Streets, thence northerly along said easterly line of Front Street sixty (60) feet to Clark Street, thence at right angles easterly and along the southerly line of Clark Street eighty-five (85) feet to and including the brick wall and the land on which stands the wall which now constitutes the rear or easterly wall of the building erected on the premises hereby conveyed, provided that said wall now is and shall remain forever a party wall between the premises hereby conveyed, and the lot of land with its appurtenances lying to the east of the said premises, and if and when the said building is increased in height as hereinafter provided, the rear or easterly wall thereof, so far as built up to a greater height, shall also consti-

tute a party wall between the said premises and the said lot to the east thereof, without being chargeable to the latter for any part of the cost of erecting it, thence at right angles southerly and parallel with Front Street sixty (60) feet, thence at right angles westerly and parallel with Jackson Street eighty-five (85) feet to the easterly line of Front Street and point of commencing.

Together with all and singular the hereditaments and appurtenances thereunto belonging or in anywise appertaining; and the reversion and reversions, remainder and remainders, rents, issues, and profits thereof, and also all the estate, right, title, interest, claim, or demand whatsoever of him, the said party of the first part, either in law or in equity of, in, and to the above bargained premises and every part and parcel thereof.

To have and to hold all and singular the said hereinbefore granted and demised premises, with the appurtenances, unto the said parties of the second part and their successors forever upon the trusts, nevertheless, and to and for the uses, interests, and purposes hereinafter limited, described, and declared, to wit:

1st. Until the improvement and enlargement of the building erected on said premises, to be made as hereinafter mentioned, the said parties of the second part shall at all times and continuously, in consideration of this conveyance, demise, let, and furnish unto the "*Cogswell Dental College of the University of California*," all and singular the second story of the brick building situated in said premises as it now exists, or so much thereof as the Faculty of said Dental College may require, except the portion thereof which is demised to said party of the first part by an indenture of lease of even date with these presents, to be used by said Dental College for the purpose thereof, and subject to such changes or alterations in the arrangement and partitioning of the said rooms as the Faculty of the said Dental College may deem it proper to make; *provided*, that when the said parties of the second part shall have made and completed the said improvement and enlargement for the said building, as hereinafter mentioned, then and thenceforth they shall demise, let, and furnish unto the said "*Cogswell Dental College*" one entire story in the said building for the exclusive use and purposes of the said College, said story to be selected by the Faculty of said College, and if the said parties of the second part in their discretion should deem it advisable, they shall furnish the said Dental College, gratuitously, with so much more room in the said building, beside the said story thereof, as they shall deem needful for its uses and purposes.

2d. That the parties of the second part shall use all proper efforts to rent or demise all the rest and residue of the said building, including the stores on the first floor thereof, to suitable tenants, for the highest and best rents that can be obtained therefor, and that after paying out of said rents the necessary expenses connected therewith, and with the maintenance and preservation of the said building, they shall employ the remainder, to wit: the net amount thereof as an accumulation fund, which fund and interest thereof, if they shall be able to obtain interest on the same or any portion of it, shall be kept augmenting until it has attained an amount or aggregate sum sufficient to enable the said building to be improved and enlarged by the addition of three new brick stories thereto; that is to say, two full stories and such third story or half story as shall be afforded by a Mansard roof, which shall by them be placed on said building, and the said improvement and elevation, and any corresponding improvement in the portion of the building already erected, shall be made in such form and with such regard to finish, quality, and character of ornament as shall seem to said parties of the second part best adapted to further and fulfill the purposes of the party of first part in the creation of the said trust; *provided*, that the stone tablet, with the inscription "*Cogswell's Building, 1859*," shall be permanently retained upon and constitute a visible portion of said building.

3d. That it may be at all times lawful and proper for the said parties of the second part, in order to facilitate and expedite the aforesaid enlargement and improvement of said building, to hypothecate and pledge the future rents thereof, as well those arising from the said building in its present form, as those which may ensue from the new portions of said building so to be superadded as and for a means of securing and paying for the cost of the said improvement, by obtaining a loan of money sufficient for that purpose, to repay which loan with interest said rents may be by the parties of the second part pledged and hypothecated; and in case said loan is effected, it shall be the duty of the parties of the second part to repay the same, with the interest thereof, out of the first net rents received by them, and before employing the said rents or any part thereof, for any of the other trusts herein created and specified; *provided*, that the said party of the first part, H. D. Cogswell, shall have the first option or choice of making the said loan, and taking the said security therefor.

4th. After the building has been enlarged and completed as aforesaid, the said parties of the second part shall provide and furnish in perpetuity one entire story thereof to the said Dental College, and so much more of the room therein as they may deem needful, and as hereinbefore specifically provided.

5th. All the rest and residue of the said building, except that portion thereof which is demised to said party of the first part by an indenture of lease of even date with these presents, shall be let and rented by the said parties of the second part to suitable tenants for the highest and best rents that can be obtained therefor, and out of the net receipts from the said rents, after paying the necessary expenses connected therewith, and when said receipts become sufficient for that purpose, up to which period they shall be accumulated, if necessary, so as to constitute a fund in furtherance of the same object, they shall be appropriated by the said parties of the second part to the payment of a monthly amount or sum of \$200, or \$3,600 per annum, for the establishment and maintenance of a Chair in the said University, which it is the further object of these trusts to create and endow, to be known and designated as the "*Cogswell Chair*"

of Moral and Intellectual Philosophy," and said sum shall be so appropriated in perpetuity or so long as the said parties of the second part shall be enabled to realize the same from the sources aforesaid.

6th. After appropriating the rents of the said premises as aforesaid, the parties of the second part shall appropriate such further net proceeds as shall result therefrom, one-half to the said Dental College, for the uses and purposes thereof, and one-half to the said parties of the second part, to be used in and under their discretion, as a means of contributing to the support and maintenance of such students in the said University as, from their lack of pecuniary ability, are incapable of supporting themselves during the period of a collegiate course, and who would otherwise for such reason be unable to obtain the benefit of an education in the said University: *provided*, that when such further net proceeds amount to the sum of \$600 per annum, the one-half thereof, namely, three hundred (\$300) dollars, is to be appropriated to the said Dental College as aforesaid; then and thereafter all the increase of the said net proceeds over and above the said sum of \$600 shall be appropriated by the said parties of the second part to the full extent to which the amount thereof may increase at any time hereafter to the same object as that hereinbefore last above mentioned, to wit: to the support or maintenance of such students as from their said lack of pecuniary ability are incapable of supporting themselves during the period of a collegiate course, and who would otherwise for such reason be unable to obtain the benefit of an education in the said University, which fund last mentioned shall be known and designated as the "Cogswell Students' Relief Fund;" *and provided further*, that if at any time hereafter, in the discretion of the said parties of the second part, it shall be deemed desirable to use the said net proceeds over and above the said \$600, or any part of said net proceeds, for the purposes of said Dental College, either to pay for the services or salary of professors or lecturers, or to render the tuition in said College free and gratuitous, or for both of said objects, it shall and may be lawful for them so to do, and these trusts are upon the express condition that they may exercise, at all times, the said discretion, and so appropriate the said proceeds, or any part thereof, it being the wish of the said party of the first part that the said Dental College should be brought, by the parties of the second part, to as high a degree of character, scholarship, standard of tuition, and efficiency as exists in any similar institution.

7th. That the said premises hereinbefore conveyed, and their extension and enlargement and the accumulation derived therefrom, shall constitute three several endowments by the said party of the first part, Henry Daniel Cogswell, and Caroline Elizabeth, his wife, namely, an endowment for the said Dental College, an endowment for the said Chair of Moral and Intellectual Philosophy, and an endowment for the said Students' Relief Fund, to the creation of which several endowments the party of the first part and his said wife are prompted by their desire to aid the cause of dental science and the cause of education.

8th. That the said parties of the second part shall and will keep the building erected upon said premises and any addition, improvement, or enlargement made thereon as aforesaid, insured against loss by fire to an amount equal to two-thirds of the value of the said building, exclusive of the foundations thereof, consisting of the piles and capping which constitute the same, out of said fund.

9th. That in case the said parties of the second part should sell or mortgage the premises hereinbefore conveyed, or any part thereof, this conveyance and transfer shall thereafter be considered and be null and of no effect, and the property hereby conveyed shall revert to, and become the property absolutely of, the party of the first part or his legal representatives.

10th. That the estate hereby conveyed, and the net proceeds thereof, shall constitute the sole and only fund and source from which the said trusts shall be sustained and the said endowments supported, and the moneys required therefor obtained, and the said parties of the second part shall not be liable in their individual or corporate capacity, nor shall the said University be liable to advance any further or other moneys or become in any respect chargeable for any expense or charge whatever connected with the said trust.

In witness whereof, the said party of the first part has hereunto set his hand and seal the day and year first above written.

HENRY D. COGSWELL.

Signed, sealed, and delivered in presence of

CAROLINE E. COGSWELL.

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STATE OF CALIFORNIA, }
City and County of San Francisco, } ss.

On the 19th day of May, A. D. 1879, before me, George T. Knox, a Notary Public in and for said city and county, residing therein, duly commissioned and sworn, personally appeared Henry D. Cogswell, known to me to be the person described in, whose name is subscribed to, and who executed the within instrument, and he duly acknowledged to me that he executed the same.

In witness whereof, I have hereunto set my hand and affixed my official seal, at my office in the City and County of San Francisco, the day and year last above written.

[L. s.]

GEORGE T. KNOX, Notary Public.

And the said parties of the second part, in pursuance of a resolution of the said Board of Regents, passed on the 19th day of May, 1879, and set forth in the book of records of the said Board, have caused these presents to be sealed with the corporate seal, signed by the President, and attested by the Secretary of the said Board, the day and year first above written.

WILLIAM IRWIN,
Governor and ex officio President Board Regents University of California.

Signed, sealed, and delivered in the presence of E. W. MASLIN.

[L. s.] Attest: ROBT. E. C. STEARNS,
Secretary of the Board of Regents of the University of California.

BOARD OF REGENTS, SAN FRANCISCO, May 19th, 1879.

The within was duly approved this day by the Board of Regents.

J. HAM HARRIS, Assistant Secretary.

LEASE BETWEEN THE REGENTS OF THE UNIVERSITY OF CALIFORNIA AND HENRY D. COGSWELL AND CAROLINE E. COGSWELL.

This indenture, made the 19th day of May, 1879, between The Regents of the University of California, an institution duly created, organized, and existing under the laws of the State of California, and by said laws placed under the charge and control of a Board of Directors, known and styled as the Regents aforesaid, the parties of the first part, and Henry D. Cogswell and Caroline Elizabeth Cogswell, his wife, of the City and County of San Francisco, State of California, the parties of the second part, witnesseth: That the said parties of the first part, for and in consideration of one dollar, to them in hand paid by said parties of the second part, the receipt whereof is hereby acknowledged, have letten, and by these presents do grant, demise, and to farm let unto the said parties of the second part, *all* and singular, the rooms numbered 6, 7, 8, 9, 10, 11, and 12, at present occupied by the parties of the second part, in the second story of that building situated at the southeast corner of Front and Clark Streets, in the City and County of San Francisco, State of California, and commonly known as No. 610 Front Street, including the south hall in the said story of said building, with the appurtenances, for the term of the natural lives of both of said parties of the second part, no rent to be paid at any time therefor by said parties of the second part.

And the said parties of the first part do covenant that the said parties of the second part shall and will have the right and privilege of making any alterations, improvements, or changes they may desire to make in the said premises hereby demised to them, but at the proper cost and expense of the said parties of the second part: and it is further covenanted that the parties of the second part shall and will have the right of using, at all times, the halls, stairways, yard, and water-closets situate in or within said premises, and the said parties of the first part shall pay for and furnish for said parties of the second part all the water that may be necessary and usually required in and about the said premises hereby granted and demised.

And it is understood and agreed that the said parties of the second part shall have power to underlet or allow any other person besides themselves to occupy the said rooms so demised or any part of them; and that in case the building hereinbefore described should be enlarged or improved by the erection and construction of any additional stories thereupon by said parties of the first part, the said parties of the second part shall have the option to exchange the rooms herein demised for other rooms similarly located, situated, furnished, and arranged, and of similar dimensions in the top story, and occupy and enjoy the use of such other rooms under and by virtue of the same terms and conditions as are herein contained with regard or respecting the rooms herein demised.

And it is further understood and agreed that the terms, covenants, and conditions of this lease shall be and are binding upon the parties of the first part and their successors during the joint natural lives of the parties of the second part and the natural life of the survivor of said parties of the second part.

In witness whereof, the said parties of the first part, in pursuance of a resolution of the said Board of Regents, passed on the 19th day of May, 1879, and set forth in the book of records of the said Board, have caused these presents to be sealed with the corporate seal, signed by the President, and attested by the Secretary of the said Board, the day and year first above written.

WILLIAM IRWIN,
Governor, and President Board Regents of University of California.

Signed, sealed, and delivered in the presence of E. W. MASLIN.

[L. s.] Attest: ROBT. E. C. STEARNS,
Secretary of the Board of Regents of the University of California.

BOARD OF REGENTS, SAN FRANCISCO, May 19th, 1879.

The within was duly approved this day by the Board of Regents.

J. HAM HARRIS, Assistant Secretary.

The foregoing documents were executed by the officers of the Board by virtue of the following resolution :

Resolved, That the Board of Regents of the University of California do hereby accept the donation of Dr. H. D. Cogswell upon the terms embraced in his deed, and authorize the execution of a certain lease between the Regents of the University of the State of California and Henry D. Cogswell and Caroline E. Cogswell, and that the Honorable William Irwin, Governor of the State of California and President of said Board of Regents, be and is hereby authorized and empowered to sign, on the part of the Regents of the University of the State of California, said deed and lease, and that the corporate seal be affixed and duly attested by the Secretary of the said Board of Regents.

ESTABLISHMENT OF THE "COGSWELL DENTAL COLLEGE."

As to the organization of this College, the following was resolved upon :

Resolved, 1. That the Board of Regents of the University of California, in conformity with the terms of the deed executed by H. D. Cogswell, establish a Dental College, to be designated the "Cogswell Dental College," in which complete courses of instruction must be given in the Theory and Practice of Dentistry, consisting of such appropriate studies and lectures as may be determined by the said Board of Regents.

2. That the following Chairs be established in said College, to be filled by the Board of Regents, by the election of competent professors and instructors, as soon as may be practicable, namely :

- (1.) A Chair of Operative Dentistry.
- (2.) A Chair of Mechanical Dentistry.
- (3.) A Chair of Regional Anatomy and Surgery.

Also, in connection with the "Medical Department" of the University of California, the following Chairs :

- (a.) A Chair of Anatomy.
- (b.) A Chair of Physiology.
- (c.) A Chair of Chemistry.
- (d.) A Chair of Surgery.

Also, such other Chairs, under appropriate designations, as the said Board of Regents may hereafter see fit to establish in said College.

3. That the Board of Regents will confer the Degree of "Doctor of Dental Surgery" at the end of the prescribed course upon such students as, having completed the same, are found proficient therein.

4. That the compensation of the professors and instructors in said College, as well as other expenses of the same, are to be paid from the tuition fees of the students and the special endowment fund of said College, in such manner as the said Board of Regents may determine.

5. That the said College be organized in accordance with the several "requirements" of the donor, herewith submitted :

REQUIREMENTS OF THE DONOR IN RELATION TO THE ESTABLISHMENT OF THE "COGSWELL DENTAL COLLEGE."

1. That twelve (12) free scholarships be granted to the donor or his legal representatives, he or they nominating the candidates for such scholarships, who, when found properly qualified, shall receive tuition in all branches of study required for the proper degree in the "Cogswell Dental College," free from all charge for the same.

2. That the Faculty of said College shall, as soon as practicable, organize a system of "free dental operations," for a class of persons who may be adjudged unable to pay for the same, to be kept open at such hours at said College as may be arranged by the said Faculty. This is not intended to prevent the exaction of small charges for necessary supplies, sufficient to cover the actual cost of material used, for themselves and others not able to pay anything.

3. That when the "Cogswell Contingent Fund," as provided in the deed, becomes available, it shall be used—first, in small temporary loans to indigent and meritorious students in said College, of approved moral character and frugal habits; and second, in providing proper appliances for instruction.

4. That qualified females shall be received as students in the said College upon the same terms as males.

5. That no person of proper qualifications and of good moral character and habits shall be refused admission or graduation in said College, on account of nationality, color, politics, or religion.

(Signed) :

H. D. COGSWELL.

BACON LIBRARY AND ART BUILDING, ETC.

Following the proposition made last year by Henry D. Bacon, Esq., for the erection of a building for a Library and Art Gallery, and the further gift of his books, pictures, and sculptures, this year (April 8th, 1879), he presented paid up policies of insurance, covering the books and works of art as above, in the sum of \$28,000.

MUSEUM AND LIBRARY.

A very considerable addition to the Museum collections in the various departments has been received, and the Library has also been remembered by many generous persons. For a list of donors and their gifts reference is made to the lists which follow.

THE UNIVERSITY LIBRARY.

During the years 1877-9 1,844 volumes have been added to the Library. Of this number 1,114 volumes have been purchased, 558 have been presented, 168 have been bound, and 4 volumes have been received in exchange.

Of the purchased works sets of valuable periodicals form an important portion.

Among the gifts of friends the following deserve special notice:

Honorable Alexander Del Mar has presented us with 191 volumes, besides many pamphlets, nearly all relating to the department of political economy. This gift, we understand, is to be followed by others hereafter.

From Mrs. G. B. Crane, widow of the eminent ornithologist, the late Colonel Andrew J. Grayson, has been received an exceedingly valuable and almost unique work, consisting of 163 plates of the birds of Mexico and Southern California. These are all drawn and painted to life in water colors, the only duplicates being those deposited in the Smithsonian Institute. The original collection was made for the Academy of Arts and Sciences of Mexico, at the instance of Maximilian, but the contract was rescinded upon the death of that prince. The researches made by Colonel Grayson in the ornithology of Mexico have not been surpassed by any other naturalist in this country, and the scholars and scientists of the Pacific Coast in the future will feel the thanks we owe to Mrs. Crane for her liberality in thus placing the result of her husband's labors at their disposal.

Colonel William G. Boyle presented the philosophical and chemical works of Honorable Robert Boyle as a testimonial of the "great interest which I feel towards the educational institutions of the Pacific Coast."

Honorable John B. Harmon presented a number of publications descriptive of New South Wales, and also a collection of photographs illustrating the scenery and public works of that country.

Mr. George R. Ghiselin presented a manuscript of an ancient date relating to the mining laws of Peru.

Honorable Stephen J. Field and Honorable A. A. Sargent have further honored us with many gifts.

LIST OF GIFTS RECEIVED DURING 1877-1879.

	Volumes.
American Swedenborg Publication Society	1
Anonymous	7
Bancroft, A. L. & Company	1
Barry, Sir Redmond, Melbourne	9
"Berkeleyan" Managers	4
Bien, Morris, Class of 1879, University of California	1
Bishop, D. M.	2
Boston Public Library	1
Bowie, A. J., Jr.	1
Boyle, Colonel Wm. G.	6
Brown, Hon. W. B. C.	1
Carmany, John H.	10
Childs, G. W., Philadelphia	1
Colden Club, England	3
Consul for Chili, San Francisco	1
Davie, W. J., Kentucky	1
Davis, Hon. Horace	2
Del Mar, Hon. Alexander (besides pamphlet)	191
Dwinelle, Charles H.	5
Earnshaw, W., Dayton, Ohio	1
Eriesson, John	1
Field, Hon. S. J.	26
Freud, Hon. J. R.	1
Ghiselin, George R.	1
Ginn, Brothers, Boston	1
Gold, T. S., West Cornwall, Ct.	2
Gorham, Hon. George C.	1
Harmon, Hon. John B.	21
Harrison, G. L., Philadelphia	1
Hatch, F. W., M. D.	1
Hittell, John S.	1
Hutchings, James M.	2
Illinois Department of Agriculture	1
Illinois Industrial University	1
"Instructor"	2
Jackson, A. Wendell	5
Jaffa, M. E., Class of 1877, University of California	1
Janes, T. P., Georgia	1
Jay, Hon. John	1
Kellogg, Professor Martin	7
LeConte, President John	1
Librarian	2
McRuer, Hon. D. C. (besides 52 duplicates)	24
Madison (Wis.), Superintendent Public Property	1
Mallory, Colonel Garrick, U. S. A.	1
"Manfred"	1
Mann, Hon. A. L.	5
Marsh, Professor O. C.	1
Missouri State University	2
Montgomery, Hon. Zack.	1
Moses, Professor Bernard	1
Page, Hon. H. F.	9
Palmer, W. B., University of California	1
Pioda, Professor Paul	1
Poppe, R. A., Class of 1879, University of California	1
Richmond and Gordon, Duke of	1
Rowell, G. P. & Company	1
San Francisco Board of Supervisors	2
Sargent, Hon. A. A.	39
Schwartz, J., New York Apprentices Library	1
Smith, R. G., per F. W. Henshaw	2
Smithsonian Institute	6
Sotheran, Henry & Company	1
Stearns, R. E. C.	1
Stinson, John H., Eureka	1
Thompson, Hon. A. B., Secretary State New Hampshire	2
Thompson, Elizabeth, N. Y.	1
Toland, Prof. H. H.	1
Toland, Mary B. M.	1
United States Bureau of Education	1

United States Bureau of Statistics	5
United States Coast Survey	2
United States Department of Agriculture	1
United States Department of State	3
United States Department of the Treasury	5
United States Department of War	3
United States Engineer Department (besides charts)	16
United States Hydrographic Office	29
United States Interior Department	9
United States Naval Observatory	2
United States Ordnance Bureau	16
United States Signal Service Bureau	15
Verbeck, Dr. G. F. (late of Japan)	4
Virginia, University of	1
Waterhouse, Sylvester, St. Louis	1
Welch, President A. S.	1
Weleker, Adair, University of California	1
Whitney, George E., Oakland	4
Wiley, Rev. S. H., Santa Cruz	1
Williamson, Hon. J. A.	1
Zeile, Fred. W., Class of '78, University of California	1
Total, including two maps	556

THE UNIVERSITY MUSEUM.

MEMORANDA OF ADDITIONS TO THE MUSEUM—1877-1879.

TO THE MUSEUM OF CLASSICAL ARCHEOLOGY.

- Adams, W. L.: A Peruvian Silver Coin.
 Easterby, F. G.: A Mexican Silver Coin and an Anglo-Chinese Silver Coin.
 Hammond, R. P.: Ancient Coin from Pompeii, an Helvetican and an Italian.
 James, Louis J.: Coin of the Byzantine Empire.
 Rogers, E. B.: A collection of Coins numbering 112 examples, among which are Sardinian, Portuguese, Spanish, English, Mexican, Italian, Republic Peru, Chinese, Japanese, British American, British Indian, Prussian, Austrian, German, and Lombardo-Venetian. Also, a consecutive set of Confederate Scrip, from 50 cents to \$100, and a Coupon of Bond.
 Suter, D., Class of '82: Presented a set of Swiss Coins; a five franc standing posture wanting only to make it complete. They are as follows, viz.: one five franc, silver, sitting position; two two franc, silver, one sitting and one standing positions; two one franc, silver, one sitting and one standing positions; two half franc, silver, one sitting and one standing positions; two twenty centimes, bronze: two five centimes, bronze: one two centimes, copper: one one centime, copper; and twenty-six miscellaneous Copper and Bronze Coins.

TO THE MUSEUM OF ETHNOLOGY.

- Berry, Hon. C. P., Wheatland, Yuba County, California: A large-sized Indian Mortar and an extra sized Pestle, excavated from land belonging to C. P. Berry, situated south of Marysville. Also, three Indian relics: A Spear-head in obsidian: a worked stone known as a Plummert or Sinker: and a stone grooved on its longer axis, obtained from mound on Bear River, California.
 Charleston, W. S., Class of '79: A well formed sandstone Pestle, from Mayfield, Santa Clara County, California; a finely finished stone relic of the shuttle or drill type, from Mayfield, Santa Clara County, California.
 Clark, Russell W., Berkeley: Arrow-head of yellow jasper, found near Zeta Psi Hall, Berkeley.
 Crawford, A. W., Oakland: Human Skull, from Santa Cruz, California.
 Easterby, F. G.: Indian relics from Napa, consisting of Pestle and Mortar, a well finished specimen of the shuttle type, and numerous Arrow-heads.
 Edwards, Dr. A. Mead, Berkeley: The War Hatchet, Pipe, and Snow-shoes, originally belonging to the celebrated Chief of the Seneca Indians, Red Jacket.
 Ghiselin, Dr. G. R., San Francisco: Three Copper Weapons, found in a burial place of the ancient Peruvians, near Truxillo, Peru.
 Hawkins, L. L.: A rare Indian relic, supposed to be a Stone Rubber, from the Berkeley Mound: pair of Snow-shoes used in crossing the Sierras.

- Learned, D. A., Stockton: Stone Dish used by the Indians, and a Pestle in serpentine.
 Maston, Mrs. G. W.: Scoop or Spoon belonging to Medicine-man of one of the Indian tribes of British Columbia.
 Smith, H. S., Oakland: A finely finished, large sized Indian Mortar, and a smoothly worked Ball of compact sandstone. This latter was used, it is supposed, for crushing the softer articles of food by rolling.
 Sutton, F. A.: An Indian's Skull, found on the sands of Humboldt Bay.

TO THE MUSEUM OF ZOOLOGY.

- Allis, S. M., Santa Rita Mountains, Arizona: Some interesting *Orthoptera*.
 Atwater, F. H.: Sponge, from San Pablo Bay, Marin County, California.
 Barry, Miss, Class '80: Specimen of California Gray Bat, found at Berkeley: also, some examples of *Coloptera* and *Arachnida*.
 Bennett, A. A., San Francisco: Fine specimen of *Gorgonia*, from Tahiti.
 Berger, W. E., San Francisco: Shark's Vertebra, from Australian waters.
 Blake, Dr. E., San Francisco: A large bivalve Shell.
 Booth, Edgar H.: Specimen of Lewis' Woodpecker, *Melanerpes torquatus*.
 Bowles, P. E., Class '82: Grey Squirrel, from Santa Cruz Mountains.
 Bradley, Miss E. N.: Jar containing human brain.
 Bromley, R. Innis: Young of *Crotalus Lecontei*, Berkeley Hills.
 Chapman, W. H.: A rare Snake, found in the basement of the South Hall, Berkeley.
 Cheney, L. W., Class '78: Specimen of the Snake *Rhinocentrus Lecontei*, from Grayson, Stanislaus County, California.
 Clark, J. H., Calito: Nest of *Psaltiriparus minimus*.
 Clark, X. Y.: Forepart of Baleens of *Sibbaldius sulphureus*, 4 specimens of Echini, 2 Chitons, and a whale's vertebra: all from Half-moon Bay, San Mateo County, California.
 Colby, G. E.: Specimen of Cormorant, from Chabot's water-works, Alameda County.
 Crawford, A. W., Oakland: Added 28 species of American Helices, numbering 148 specimens; 2 specimens of rare Marine Shells, one of which is *Pedicularia Californica*; also, a Crab, from Monterey.
 Cunningham, J. F., Felton, Santa Cruz: Specimen of Heron and a Wild Cat, both in the flesh, from same district.
 Day, Miss Anna, Berkeley: The rare *Limnitis Californica*. Locality, Strawberry Cañon, Berkeley.
 Easterby, Miss E. Y., Napa: A perfect specimen of a Star-fish, having six rays. Found at Santa Cruz.
 Eckles, C., San Pablo Station: A living *Tarantula*.
 Ellis, William, Berkeley: Specimen of rare form of Water Snake, *Eutania Pickeringii*; specimens of common Hare, from University grounds.
 Fallon, A.: Specimen of Lewis' Woodpecker, *Melanerpes torquatus*.
 Finnie, Walter F.: A blue Heron, Diver, valley Quails, Water-rails, Burrowing Owl, Shrike, Meadow-larks, and a Snake, *Eutania proxima*: Skin of mountain Quail, and four specimens, in flesh, of the Cedar Bird, and a specimen of the Owl, *Bubo Virginianus*, from Grass Valley.
 Gompertz, Charlie, Berkeley: Specimen of *Limnitis Californica*, from Strawberry Cañon, Berkeley.
 Hanks, Henry G., San Francisco: Specimen of Barnacle.
 Harris, W., Berkeley Gymnasium: The Lizard, *Gerrhonotus multicarinatus*.
 Harrison, E. C.: Two specimens of Tarantula, from Haywood, California.
 Hart, John, Berkeley: Young specimen of the Hawk, *Buteo calurus*.
 Hawkins, L. L.: Wild Cat, from Strawberry Cañon, Berkeley; specimen of the Snake *Contia nitens*, from University grounds.
 Herr, Mrs., Berkeley: A large Barnacle, a *Balanus* from Washington Territory.
 Hilgard, Eugene, Berkeley: Eggs and Nest of *Turdus naus*, from Berkeley.
 Holman, F. V.: A rare Fish from Washington Territory.
 Hubron, F. L., San Diego: A Marine Worm, from Ballast Point, San Diego, California.
 Hughes, George, Berkeley: Two living specimens of Quail, one each of *Oreortyx pictus* and *Lophortyx Californicus*.
 Law, Miss Annie E., Hollister, California: A collection of 34 species of American land and fresh-water Shells, all named, and with localities given.
 LeConte, Louis Julian, Oakland: Several Crustaceans, one of which, a small species, supposed to be parasitical, being taken from the gills of a salmon, *Pholas Pacificus*, and a Nereis, all from the Bay of San Francisco.
 Levy, S., Class '82: Some marine Shells from Mexican shores.
 Long, L. H., Class '80: The fine longicorn, *Rosalia funebris*, from Berkeley.
 Mailliard, John, San Rafael: Nest and Eggs of the Humming Bird, *Selasphorus rufus*, and the eggs of twenty-two species numbering sixty specimens of Birds, natives of Marin County, California.
 Mailliard, Joseph: A Wild Cat, *Lynx rufus*, *Sciurus fessor*, and *Tamias Townsendii*, and among birds are *Regulus satrapa*, *Regulus calendula*, *Turdus nana*, and *Cyanura Stellerii*; also, a splendid specimen of Cinnamon Teal, *Querquedula cyanoptera*; Bear's Skull, *Ursus Americanus*, from Marin County, California.

McMurray, D. C., Berkeley Gymnasium: *Pituophis catenifer*, and Nest and Eggs of Humming-bird.

McMurry, Class '82: A mounted specimen of the Meadow-lark.

McHenry, J., Temescal: Specimen of the Snake, *Diadophis paucellus*.

Martin, Mrs. J., West, Oakland: Skull of Sea Otter, Skull of Puffin, Palate Teeth of Ray, Stone bored by pholades, Ear-bone of Whale and two Hair calculi from stomachs of cattle.

Martin, S. F., Oakland: The Eggs of forty-four species of California birds, numbering ninety-seven specimens.

Martin, S. T., Oakland: Nest and Young of Humming-Bird.

Mastick, G. H.: Three Axial Rods of the polyp, *Verillia Blakei* (Stearns), from Puget Sound, British Columbia.

Palmer, Theodore, Berkeley: Specimen in the flesh of the Hawk, *Circus Hudsonius*, from Berkeley.

Robinson, Mrs. J. C., Oakland: A preserved specimen of the rare Hawk, *Accipiter Mexicanus*, from San Mateo County, California.

Rowley, R. G., Mayfield, San Mateo County, California: Specimen of Rocky Mountain Lion, from Santa Cruz Mountains, California.

Stearns, R. E. C., Berkeley: Various specimens of California Fishes.

Stearns, W. R., Ukiah, Mendocino County: Specimen of that beautiful Lizard, *Eumeces quadrifasciatus*.

Stillman, Stanley, San Francisco: Skins of several species of native Finches.

Suter, D.: A very perfect cluster of Coral, new to the Museum collection, from Tahiti.

Sutton, F. S., Fanning Island, South Pacific: A collection of nine specimens of apodal Fishes of the genus *Muraena*, a pipe-mouth Fish, *Fistularia*, a small stalked-eyed Crab, and a fine specimen of the land Crab, called the Cocoa-nut-eating Crab.

Toland, Thomas O.: The Wood Snake, *Wenona plumbea*. Locality, Strawberry Cañon, Berkeley.

Tredwell, G. F., Oakland: A fine living specimen of Rattlesnake, from Arizona.

Voy, C. D., Oakland: Stuffed specimen of pipe-mouthed Fish, from Caroline Island, South Pacific.

Woodman, T. N., Class '82: Specimen in the flesh of Nuttall's Whip-poor-will, from Strawberry Cañon, Berkeley.

Wyman, Miss Maud, Oakland: Various zoological specimens from the Sandwich Islands.

TO THE MUSEUM OF BOTANY.

Anderson, Dr. C. L.: "Algae Exsiccatae Americae Borealis." Fasciculus II, by D. C. Eaton, C. L. Anderson, and W. G. Farlow; "Algae Exsiccatae Americae Borealis." Fasciculus III.

Crawford, A. W., Oakland: Specimen of Mexican and other Woods.

Edwards, Mrs. Dr., Berkeley: A large collection of Plants of the flora of Great Britain.

Edwards, D. K., Monterey, California: Beech Wood from East Tennessee.

Heald and Guerne, Guerneville, California: A large slab of Redwood, *Sequoia sempervirens*.

Jaffa, Madame R. S., San Francisco: Presented 101 examples of Medical Herbs or their Properties, illustrative of English practice and found in the British Pharmacopœia. They were collected and named by the late Hyman Marks, L. R. C. S. I. Also, a Botanical Companion to the British Pharmacopœia, by the same.

Little, Captain W. C., Oakland: Transverse section of trunk of Cocoa Palm, from Sandwich Islands.

Levy, S., Class '82: Examples of Sandal Nuts.

Merrill, Dr., Berkeley: Bark and Wood of both the red and yellow Cinchona.

Shaw, Miss Mattie J., Oakland: Piece of birds-eye Redwood, *Sequoia sempervirens*, from Fisk's saw-mills, Sonoma County.

Standiford, Burnham & Company, Oakland: Section of black walnut Baluster, showing curious knot formation.

Tenny, Rev. W. A., Oakland: Wood of Oregon Maple and Crab-apple.

TO THE MUSEUM OF GEOLOGY.

Ainsworth, G. J., Portland, Oregon: Portion of Root and Stem of fossilized Tree and some fossil Leaves, from Lower Cascades; some Lignite from the Cascades and Basalt from the Dalles.

Batterman, C. C., Carson City, Nevada: Fossil Teeth of *Equus Occidentalis* and of *Equus major*; fragments of Bone and of Teeth of an *Elcphus*, a Tooth of fossil Horse, some Shells (*Anodontia*), some Teeth of an undetermined mammal, and some fossil Wood; all from the gravels and sandstones of Carson City, Nevada.

Boyd, J., Cold Springs, Cariboo, British Columbia: Shoulder Joint and *humerus* of some large mammal; also, part of the *Pelvis* of large mammal. Both found in gravel and appear fossilized.

Brunton, D. W., Silver Peak, Esmeralda County, Nevada: Rocks from Deep Cañon, Red Mountain Range, Esmeralda County, Nevada.

Carpenter, E. G., Routier's Station, Sacramento County: Sandstone Concretions from Routier's Station.

Cowell, Mrs. E., Santa Cruz, California: Fossil Shell of *Arca sulcicosta*.

DeVariess, Smith: Fossil Shell from railroad cutting, Martinez.

Hilgard, Professor E. W., Berkeley: Some fine Calamites and other Fossils, from Europe.

- McMahon, S. G., Dixon: Tufa Concretions from Dixon, Solano County, California.
 Martin, Mrs. J. West, Oakland: Fossil Shells and concretionary Sandstone.
 Neufelder, F., Victoria, British Columbia: Fossil *Astragalus* of a *Bos*, specimen obtained sixty feet below surface, in hard cement, near Bakerville, Cariboo, British Columbia; fossil *Astragalus* of a *Bos*, specimen found at Cariboo, British Columbia.
 Tenney, W. A., Oakland: Two specimens of *Cardium Meckianum*, from Humboldt County, California.
 Tucker, Captain John: Sent from his quarry, at Martinez, several pieces of Sandstone containing fossil shells.
 Webb, Richard, San Francisco: Specimens of *Scutella Gibbii*.

TO THE MUSEUM OF ORE DEPOSITS.

- Bonshey, S., Santa Catalina Island: "San Emilio Mine," Kern County, California.
 Brunton, D. W., Esmeralda County, Nevada: "Vanderbilt Mine," in Red Mountain Range, Esmeralda County, Nevada.
 Cleland, F. G., Groveland: "Reed Mine," Groveland, Tuolumne County, California.
 Linforth, F. O., San Francisco: "Peck Mine," Arizona.

TO THE MUSEUM OF MINERALOGY.

- Ainsworth, Captain, Portland, Oregon: Fossil Wood, from Oregon.
 Ashburner, Professor William, San Francisco: Pyrite.
 Atwater, F. H., Berkeley: Amygdules, from Sonoma County.
 Bacon, H. D., Oakland: Mass of native Silver (a valuable specimen), from Arizona.
 Barnes, G. W.: Rock Soap, from Tia Juana Valley, San Diego County, California.
 Batterman, C. C.: Gypsum, from the quarry at the Nevada State Prison, Carson City, Nevada.
 Bleasdale, D. D., Rev. J. J., Melbourne: Series of Australian Topaz.
 Byles, —, Portland, Oregon: Fossil Wood, from Cascades, Oregon; Garnet, from Alaska.
 Caswell, H.: Cinnabarite, from Buckeye Quicksilver Mine, Colusa County, California.
 Crane, Lauren E., Sierra County, California: Auriferous Sand, from the "Golden Star Mine," Alleghany, Sierra County, California.
 Crawford, A. W., Oakland: Cinnabar, from New Almaden: two specimens of Tripolite, from Los Angeles, and two specimens of Gneiss from near Piedmont, Contra Costa County, California.
 Dunn, R. L., Class '79: Group of yellow crystals of Quartz, from Forbestown, Butte County, California.
 Dunn, H. D., San Francisco: A polished crystal of Quartz having within some radiated crystals of Asbestos, from Japan.
 Easterby, F. G.: Tripolite, Tale, Calc, Tufa, from Pope's Valley, Napa County; some Cinnabarite, from Washington Mine, Napa County, and some Agate Pebbles.
 Eyre, Thomas T., Berkeley: Wad, from Mapimi Mines, Durango, Mexico.
 Fallon, A.: A mass of Quartz Crystals, from the head of Strawberry Cañon, Berkeley.
 Finnie, W. F., of '78: Asbestos, from Colfax, California.
 Fisher, W. J.: Lignite, from Bristol Bay, N. W. America.
 Fitzgerald, R. M., Berkeley: A piece of Sandstone containing Shark's Tooth, and a mass of Bone belonging to some great mammal, found near Valley Ford, Sonoma County, California.
 Furbish, Ellis: Ore, from 800-foot level of Providence Mine, Nevada County, California.
 Ghiselin, Dr. George R., San Francisco: Some fine Minerals, among which are Gold, Silver, Argentite, Pyrrargyrite, from the mining districts of Chili, Bolivia, and Peru.
 Goodfellow, Mrs. M. J., Oakland: Pyrrargyrite, Tetrahedrite, and Quartz, from the Great Eastern Mine, Austin, Nevada.
 Harding, A., Berkeley: Limonite, from Oswego, Oregon.
 Hilgard, Professor E. W., Berkeley: Tetrahedrite, from Arkansas; Chalcedony, from Oregon and from Berkeley.
 Huntley, D. B., Oakland: Cerussite, from Downieville, California.
 Hutchinson, Joseph, of '78: Fossil Wood and Asbestos, from San Diego County, California.
 James, —, Superintendent Yellow Jacket Mine: Cassiterite, from Cornwall, England.
 Knox, J. W., Oakland: Crystal Salt, from the Crystal Mine, Lincoln County, Nevada.
 Mailliard, Joseph, of '79: Cerargyrite, Paradise Valley; Graphite, Coal, Calcite, Philomelaine, Chromite, and Native Iron, all from Rancho Geronimo, near San Rafael, California.
 McHenry, Mrs. John: Horn Silver, from Ruby Hill, Nevada.
 Nicholson, W. H., San Francisco: Asbestos, from Colfax, California; Steatite, from Grass Valley, Nevada County; and Ore, from Lady Bryan, Sierra Nevada, and Idaho Mines; two specimens of Silver, from Elko County, Nevada.
 Ospina, F., Berkeley: Tetrahedrite, from Folina, United States of Colombia; Crystallized Silver, from Guatemala; Silver and Galenite, from Ateapequez Mine, Guatemala.
 Parsons, Miss A., Genoa, Nevada: LeContite and Malachite, from Mason's Valley, Nevada.
 Price, Professor Thomas, San Francisco: Chalcantite, from Storey County, Nevada; Brown Coal, from Bodie District; Zietrisikite, from Los Angeles; Asphaltum, from South Utah; Chalcocite, from Benton, Nevada; Silver, from White and Shiloh Mine, Lander County, Nevada; Pyrrargyrite, from same.
 Redding, B. B., San Francisco: Bernardinite, from San Bernardino County, California.

Reed, J. T., San Diego: Tourmaline, Arsenopyrite, Garnet, Specularite, Asbestos, Quartzite, and Steatite, from San Diego County, California.

Scott, J. B., Markleville, Alpine County: Infusorial Earth, from Reno, Nevada.

Seapham, J. R., San Francisco: Tetrahedrite, Piocho District; Garnet, from Alaska; Specularite—loc?

Shaw, W. R.: Magnetite and Calcite, from Nevada.

Sheldon, H. B., Corvelo, Mendocino County: Calcite, from the Indian Reservation at Corvelo.

Sherburne, John S.: Mimetite, from Humboldt County, Nevada.

Sherwood, W. R.: Philomelane, found at Berkeley.

Skinker, John, San Francisco: Sulphur 20m., and Kaolinite, from Humboldt, Nevada.

State Geological Society: Gaylussite, from Ragtown, Nevada County.

Speckerman, William, Fresno County: Molybdenite, from Fresno County, California.

Stearns, R. E. C.: Hornstone, pseudomorph after pisolite, from Wyoming Territory.

Varcoe, James, New Almaden: Magnetite and Specularite, from Lake Superior.

Voy, C. D., San Francisco: Argentiferous Coal and Sandstone, from the Harrisburg Mining District, Washington County, Utah.

Webber, A., San Francisco: Sphalerite, from San Francisquita Creek, San Mateo County, California.

Whitworth, Rev. G. F.: Calcareous Tufa, from Washington Territory.

Willcutt, Geo. B., of '79: Rock Soap.

SPECIAL COLLECTION—PRESENTED BY C. D. VOY.

1. Large Tree, fifteen feet high, of the *Yucca brevifolia*, Eng.

2. Tree six feet high, of the *Yucca brevifolia*, Eng.

3. Large sections of the Wood of the *Yucca brevifolia*, Eng., from which paper is manufactured.

All of above from Mojave Desert, California.

Specimens of Fiber, in the various stages of the process of manufacture, from the tree to the brown pulp, for ordinary wrapping paper; and the whitened pulp, for the finer grades of paper, with numerous samples of paper made from the same.

A beautiful collection of polished Woods. Most of the specimens are about twelve inches square, from California, Mexico, South Pacific, New Zealand, China, India, and numerous other localities, well arranged, with printed labels giving description of the same; also, a fine collection of Cones and Seeds of trees indigenous to the Pacific Coast.

Four specimens of Bread-fruit (*Artocarpus incisa*), from Tahiti, South Pacific.

One Owl, fine specimen, West Berkeley, California.

Two Fish, interesting specimens, San Francisco Bay and Flint Island, South Pacific.

One box of rich silver Ores, Arizona.

PRESENTED BY J. J. RIVERS.

*

Mr. J. J. Rivers has also collected and given to the Museum numerous specimens of Birds, Reptiles, Insects, etc.; also, ethnological and other Museum desiderata.

FINANCIAL STATEMENTS.

STATEMENT OF RECEIPTS, DISBURSEMENTS, AND INVESTMENTS FROM JULY 1st, 1877, TO JUNE 30th, 1879, INCLUSIVE.

RECEIPTS.

For account of Endowments and Trust Funds:	
Land Fund—sales from grant of 150,000 acres	\$107,136 02
Excess payments—of \$1 25 per acre, due United States	5,148 37
Brayton property mortgages	34,475 00
State fees—due for affixing State seal to patents	74 00
Bills receivable—account of sales from grant of 150,000 acres	10,975 10
Total receipts for account of Endowment and Trust Funds	\$157,808 49
Receipts available for current expenses:	
Interest from Brayton property mortgage notes	\$10,992 29
Interest from Brayton property Real Estate Fund	1,427 33
Land interest—from balance of principal due, grant of 150,000 acres	46,059 26
United States Endowment Interest—investment in bonds, account of Land Fund	37,946 83
Fees—on applications, certificates of purchase, and patents	930 00
Admission fees—from non-resident students	250 00
State Endowment Interest—tide land, investment in bonds	100,040 00
Cottage rents	2,947 50
Forfeited seminary land interest	384 00
Seminary Land Fund investment interest—invested by Regents in bonds	2,280 00
State appropriation	10,000 00
Laboratory—received from students for chemicals	1,200 35
Water rates	51 50
Special Investment Fund interest	990 00
Seminary Land Fund interest—received from State Controller	698 48
Total receipts from income	\$216,197 54
Grand total	\$374,006 03

DISBURSEMENTS AND INVESTMENTS.

Investments for account of Endowments and Trust Funds:	
United States Endowment—investment of Land Fund in bonds	\$110,254 34
Brayton Real Estate Fund—investment in bonds	30,583 33
Excess payments—paid United States	10,065 75
State Geological Survey—see Appendix "A"	501 75
State fees—paid Secretary of State for affixing seal to patents	56 00
Total disbursements for account of Endowments and Trust Funds	\$151,461 17
Disbursements from income in payment of current expenses:	
Salaries—paid Professors and Instructors	\$141,839 24
Salaries—paid Secretary, Land Agents, Curator, Janitors, etc.	27,468 85
Equipment and repairs—see Appendix "B"	4,087 47
Fuel	1,775 95
Advertising and Printing—see Appendix "C"	1,699 74
Telegraphing and expressing	475 36
Stationery—see Appendix "D"	321 10
Postage	455 40
Rent—of San Francisco offices	1,210 00
University Printing Office—for type, etc.	29 55
Toland Medical College—repairs	168 50
Land administration—see Appendix "E"	1,630 03
Incidental expenses—see Appendix "F"	100 25
University site improvements—see Appendix "G"	6,696 67
Agricultural Department—see Appendix "H"	5,168 87
Amount carried forward	\$193,036 98

Amount brought forward.....	\$193,036 98
University Water-works—see Appendix "I".....	547 72
Insurance—see Appendix "J".....	2,982 00
College celebrations—see Appendix "K".....	1,007 39
Official and lecturing expenses.....	308 36
Apparatus—see Appendix "L".....	212 60
Museum—see Appendix "M".....	65 50
Laboratory—see Appendix "N".....	3,118 62
Library—see Appendix "O".....	3,327 77
Contingent Fund.....	1,000 00
Military Department—see Appendix "P".....	1,929 28
Repairing cottages—see Appendix "Q".....	856 21
Mechanical Arts College Building—see Appendix "R".....	6,809 76
Interest and discount.....	71 10
Office expense.....	11 85
Total disbursements from receipts of income.....	<u>\$215,285 14</u>
Grand total—disbursements and investments.....	<u>\$366,746 31</u>

APPENDIX A.—*State Geological Survey.*

Paid for packing fossils.....	\$56 40
Paid for freight on minerals and fossils.....	244 26
Paid for insurance on material in New York.....	101 40
Paid for freight on books.....	99 69

\$501 75

APPENDIX B.—*Equipment and Repairs.*

Paid for labor.....	\$500 18
Hardware.....	260 35
Lettering, paints, and oils.....	12 10
Carpets and rugs.....	107 90
Brushes, dusters, brooms, etc.....	79 69
Repairing instruments.....	61 75
Repairing floor of North Hall.....	18 34
Repairing roof of North Hall.....	14 00
Repairing North and South Halls, as per contract.....	723 60
Painting South Hall, as per contract.....	327 50
Repairing marble mantels.....	17 00
Repairing students' reading-room, North Hall.....	34 10
Repairing chemical laboratory, South Hall.....	455 35
Chairs for students' reading-room.....	80 00
Matting for students' reading-room.....	96 00
Tables and desks for students' reading-room.....	87 06
Hose.....	61 75
Instrument rack, Civil Engineering Department.....	20 00
Surveyors' stakes and pins, Civil Engineering Department.....	11 25
Tracing linen, Civil Engineering Department.....	10 00
Chairs for library.....	29 50
Bookstands for library.....	18 00
Steam chest, etc., boiler house.....	51 50
Steam pump, etc., boiler house.....	287 20
Repairing steam-boiler, boiler house.....	57 05
Smoke-stack and repairs, boiler house.....	121 29
Express charges, boiler house.....	13 38
Plumbing.....	77 72
Drafting table.....	45 00
Lumber.....	24 12
Drawing paper, muslin, and crayons.....	42 55
Tent cover for platform.....	120 00
Sheeting for physical department.....	8 25
Glazing.....	13 00
Cocoa mats and mattings.....	93 00
Pick handles.....	3 50
Coal hods, shovels, basket grates, and blowers.....	11 30
Fitting keys and repairing locks.....	16 25
Map frames, etc.....	77 00

\$4,087 47

APPENDIX C.—*Advertising and Printing—Printing.*

University Press for printing bulletins, programmes, lists for library and museum, class schedules and studies, labels, placards, etc.	\$1,007 69
Annual report and financial receipts, etc.	211 70
Report of Professor Hilgard	8 10
	<hr/>
	\$1,227 49

Advertising.

Advertising in sundry newspapers; Commencement exercises, examinations, removal of Regents' office, proposals for fuel and repairs.	382 25
	<hr/>
	\$1,609 74

APPENDIX D.—*Stationery.*

For general use of the University	\$176 35
For Secretary's office	144 75
	<hr/>
	\$321 10

APPENDIX D.—*Land Administration.*

Printing and stationery	\$318 28
Janitor's salary for Land Office and Regents' rooms	162 00
Postage stamps and box rent	58 55
Telegrams	60 23
Expressage	11 65
Moving safes and furniture	130 00
Repairing safe, chairs, and cases for papers	11 80
Locks and keys for doors	4 75
Cleaning carpets and grates	2 40
Map of California and Nevada	8 00
Lettering signs and office doors	11 25
Cords, tassels, and glass for frames, Regents' room	5 66
Traveling expenses of Land Agent	236 50
Extra clerical services	465 00
Coal and wood	34 30
Registering letters	39 65
One clock and bracket	5 00
Bracket lamps and fixtures	4 00
Coal oil	1 75
Attorneys' fees and commissions	89 26
	<hr/>
	\$1,630 03

APPENDIX F.—*Incidental Expenses.*

Lettering door of Regents' room	\$4 75
Expense of legislative committee	54 88
Drawing legislative Acts	35 00
Students' labor, mailing Registers	5 62
	<hr/>
	\$100 25

APPENDIX G.—*University Site Improvements.*

Labor on grounds	\$6,369 85
Pressing hay	123 80
Lumber for drains, bridges, and walks	336 52
Blacksmithing	31 40
Hardware	12 00
Repairing harness	10 50
Drain tile	9 25
Paper (for draughting)	3 75
	<hr/>
	\$6,897 07
Less credits from sales of hay	\$190 40
Less credits from Oakland Railroad Company for use of grounds	10 00
	<hr/>
	200 40
	<hr/>
	\$6,696 67

APPENDIX II.—*Agricultural Department.*

For labor	\$3,769 00
Blacksmithing	241 60
Hardware	31 45
Twine and wheat for poisoning squirrels	5 50
Seed wheat and oats	91 18
Horse-feed	146 13
Slides for magic lantern	71 15
Mats for slides	13 82
Wood slides	15 00
Pruning shears	9 00
Lumber	80 77
Flower-pots	35 00
Water-pots	2 00
Expressage	42 00
Sulphate of ammonia	10 45
Draughting paper	3 25
Grain sacks and paper bags	3 00
Axle grease	2 75
One barrel of lime	1 75
Six wheelbarrows, hoes, etc.	38 88
Two sickles	1 50
Seven gross Chauncy C. M. glass	29 65
Services of draughtsmen	125 00
Paints and oils	16 05
Tan-bark and manure	11 00
One grain cradle	3 50
Three loads of sand, \$3; bone dust, \$51 95	34 95
Repairing instruments	15 40
Repairing harness	3 50
Lock chain, \$5 50; seed drill, \$16 20	21 70
Bottles, corks, and carbon	108 15
Seeds	40 40
Water-pipe	114 94
Powder, caps, and fuse	10 00
Hose, couplings, and reel	19 45

 \$5,168 87
APPENDIX I.—*University Water-works.*

For labor	\$348 00
For pipe	59 72
For surveys, descriptions, and report of certain land sought to be condemned for water purposes, under Act approved April 1st, 1876	100 00
For survey of springs	40 00

 \$547 72
APPENDIX J.—*Insurance.*

Premiums paid on North and South Halls	\$2,659 40
Premiums paid on cottages	238 00
Premiums paid on barn and contents	84 60

 \$2,982 00
APPENDIX K.—*College Celebrations.*

Labor—erecting platform, seats, etc., commencement day	\$171 88
Lumber for platform and seats, commencement day	180 26
Music on commencement day	303 00
Sprinkling roads on commencement day	5 00
Decorations on commencement day	30 00
Diplomas	149 50
Lettering diplomas	49 50
Certificates of proficiency	20 00
Examination papers	68 25
Medical diplomas	30 00

 \$1,007 39

APPENDIX L.—*Apparatus.*

Thirty-three feet of steel-brazed chain and spirit level.....	\$9 60
Two N. Y. rods.....	38 00
Two sets of pins.....	4 00
Two pair of handles and repairing thirty feet of chain.....	3 50
Repairing solar tripod.....	1 50
Repairing and adjusting theodolite.....	6 00
For exchange on Berlin, to order of F. Slate, Jr., for the purchase of apparatus for physical department.....	150 00
	<hr/> \$212 60

APPENDIX M.—*Museum.*

Expense of Curator at Shell Mound.....	\$2 00
Express charges.....	2 90
Labels.....	22 50
Glass jar and rubber cappings.....	1 50
Corks and cork wood.....	2 50
Ten gallons of alcohol.....	25 00
Expenses in collection of specimens.....	9 10
	<hr/> \$65 50

APPENDIX N.—*Laboratory.*

Chemicals and apparatus.....	\$3,581 63
Credit by amount paid by students for same.....	1,937 46
	<hr/> \$1,644 17
Charcoal and wood.....	11 50
Custom-house and express charges.....	95 70
Gasoline.....	146 50
Corks.....	16 57
Drug press and fixtures in agricultural laboratory.....	19 30
Apparatus and glass tubing.....	32 50
Toweling.....	12 70
Plug in gas tank and rubber packing.....	16 76
Lumber.....	31 71
Copper ring and handles.....	13 50
Hardware.....	31 18
Ammonia.....	50 40
Freight, Central Pacific Railroad.....	23 49
Whitney's express charges.....	2 50
Coke.....	8 50
Kettles.....	3 50
Chemicals and apparatus.....	564 99
Gasoline.....	157 50
Glassware.....	235 65
	<hr/> \$3,118 62

APPENDIX O.—*Library.*

For purchase of books.....	\$2,458 20
For purchase of periodicals and catalogues.....	548 47
For binding books.....	219 05
For freight and custom charges.....	29 65
For extra services in library.....	70 00
For traveling expenses of librarian.....	2 40
	<hr/> \$3,327 77

APPENDIX P.—*Military Department.*

Cleaning guns.....	\$300 15
Leather, varnish, brush, and chamois skin.....	4 15
Record book and fasteners.....	4 75
Swords for battalion.....	333 00
Carpenters work on armory.....	97 12
Lumber for armory.....	15 05
Receipt book.....	3 50
Express charges.....	4 25
For freight on arms.....	154 60
For freight on cannon.....	994 46
For labor in storing cannon.....	3 00
For interest, for advancing freight on cannon.....	15 25
	<hr/> \$1,929 28

APPENDIX Q.—*Repairs on Cottages.*

Plumbing	\$191 15
Labor of carpenter and men	132 45
Drain tile	49 70
Lumber	55 51
Inside blinds, three windows—young ladies' cottages	19 00
Hardware and labor	6 80
Repairs on cottage occupied by C. F. Gonipertz	170 00
Plumbing, cottage No. 2	7 10
Carpenter work, cottage No. 2	7 50
Carpenter work, cottage No. 1	37 00
Repairing drains—young ladies' cottage	10 00
Repairing cottage occupied by Professor LeConte	170 00
	<hr/>
	\$856 21

APPENDIX R.—*Mechanical Arts College Building.*

For labor in digging drains, etc.	\$217 75
For chairs, etc.	24 00
For carpets	82 50
For desks and chairs	134 25
For fire-screens, letter press, etc.	52 95
For water-pipe	13 10
For drain tile	182 69
For lumber for drains	106 42
For advertising for proposals for making furniture and fixtures	133 75
For steam radiator	240 00
For fire-brick	215 00
For furniture, as per contract with A. Washburn	4,830 00
For architect's commissions on \$4,830 paid A. A. Bennett, at 10 per cent.	483 00
For services of D. B. Huntley	25 00
For advertising for proposals	69 35
	<hr/>
	\$6,809 76

NOTE.—To this amount of \$6,809 76 of cash expended by the Regents, if added the amount of audited demands on the State Controller of \$38,367 65, the total cost to date amounts to \$45,177 41.

TRIAL BALANCE, JUNE 30th, 1879.

LEDGER ACCOUNTS.

Debits.

Cash deposit with Treasurer	\$13,936 48
Salaries	593,493 00
Equipment and repairs	33,647 30
Fuel, lights, and water	7,560 53
Advertising and printing	8,764 37
Telegraphing and expressing	1,822 46
Stationery	2,157 72
Postage and revenue stamps	1,326 91
Rent	7,067 00
Office expenses	1,961 34
University Printing Office	2,653 85
Incidental expenses	4,010 19
Bills receivable	60,931 35
University site improvement	36,227 91
Agricultural Department	33,396 53
University Water Company	6,148 50
Brayton property	1,592 88
Building Fund	357,396 37
Tompkins Endowment	148 60
Toland Medical College	490 83
Preparatory Department	2,045 39
Free Scholarship	5,499 99
Insurance	12,181 46
College celebrations	5,354 26
Official and lecturing expenses	5,406 16
Apparatus	22,407 48
Museum	4,749 46
Laboratory	7,223 08
Library	20,479 83
Contingent Fund	775 00
Labor Contingent Fund	1,000 00
Mechanical Department	27,075 53
United States Endowment—investment of Land Fund	384,000 00
San Francisco Savings Union	25,185 05
Security Savings Bank	32,390 31
Union Savings Bank, Oakland	31,597 56
Seminary Land Fund investment	19,380 00
Brayton Real Estate Fund	30,583 33
Hibernia Savings and Loan Society of San Francisco	5,448 80
Oakland Bank of Savings, Oakland	5,474 09
Military Department	2,194 88
Mechanical Arts College Building	45,177 41
Students' cottages	26,823 11
	<hr/>
	\$1,897,186 30

TRIAL BALANCE—Continued.

Credits.

Land administration	\$41,561 72
College of California	2,552 46
Interest and discount	47,393 44
Land Fund	377,526 10
Land interest	200,115 41
Fee Fund	9,540 50
Excess payments	43,829 02
Water rates	3,153 35
University Fund	290,281 00
State appropriations	204,826 61
State Endowment interest	259,748 37
Admission and tuition fees	2,095 00
Cottage rents	5,778 09
State Geological Survey	505 88
United States Endowment interest	58,100 00
Seminary Land Fund	505 99
Seminary Land Fund interest	698 48
Forfeited Seminary land, principal	480 00
Forfeited Seminary land, interest	738 82
Forfeited Seminary land, fees	16 00
Audited demands on Controller	338,298 30
Agassiz Professorship of Oriental Languages	1,020 90
Medal Fund	2,685 45
Engineering Department Fund—donation	101 06
Land Agent of University	492 02
Special Investment Fund interest	1,465 50
Seminary Land Fund Investment interest	2,251 50
Brayton Real Estate Fund interest	1,407 33
State fees	18 00
	<hr/>
	\$1,897,186 30

STATEMENT OF CASH ASSETS AND LIABILITIES, JUNE 30TH, 1879.

ASSETS.

Deposit with Treasurer from General Fund	\$2,278 79	
Deposit with Treasurer from Seminary and Forfeited Seminary Land Fund	985 89	
Deposit with Treasurer from State Geological Survey	505 08	
Deposit with Treasurer from Brayton property mortgages—paid	10,147 92	
Deposit with Treasurer from State fees	18 00	
Total cash balance with Treasurer D. O. Mills, June 30th, 1879		\$13,936 48

ADVANCES.

On United States Endowment interest	\$219 07	
On Brayton Real Estate Fund interest	56 67	
On United States Endowment—investment of Land Fund	13,765 84	
On excess payments	333 48	
		14,375 06

DEPOSITS.

With Union Savings Bank of Oakland	\$6,000 00	
With Oakland Bank of Savings of Oakland	5,000 00	
With Security Savings Bank of San Francisco	28,162 50	
With Hibernia Savings Bank of San Francisco	5,000 00	
	\$44,162 50	
Deduct advance from General Fund	333 48	
		43,829 02
Total cash assets		\$72,140 56

LIABILITIES.

Amount due United States for excess of \$1 25 per acre	\$43,829 02	
Amount due Brayton Real Estate Fund—payment of mortgage	10,147 92	
Amount due Seminary and Forfeited Seminary Land Fund	985 89	
Amount due Geological Survey	505 88	
Amount due Secretary of State for State fees on patents	18 00	
Amount due unpaid bills	1,927 99	
Total cash liabilities		57,414 70
Excess of cash assets over liabilities		\$14,725 86

INVESTMENT OF LAND FUND

For account of United States Endowment of 150,000 acres of Agricultural Lands, from July 1st, 1877, to June 30th, 1879.

Date of Purchase.	Description of Bonds.	Number of Bonds.	Denomination of Bonds.	Par Value of Bonds.	Rate of Purchase.	Amount Paid for Bonds.	Rate of Interest—per cent.	Amount of Annual Interest.
July 30, 1877.	City and County of San Francisco—Funded debt bonds of 1858. Interest payable semi-annually, on the 21 of January and July. Numbered 597, 599, 600, 611, 613.	5	\$1,000 00	\$5,000 00	Par.	\$5,000 00	6	\$300 00
Dec. 31, 1877.	City and County of San Francisco—Funded debt bonds of 1858. Number 881.	1	1,000 00	1,000 00	Par.	1,000 00	6	60 00
Dec. 31, 1877.	City and County of Santa Clara Bonds—Mature on or before July 1st, 1890. Interest payable semi-annually, on the 1st of January and July. Numbered 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 167, 168, 169, 170, 171, 172.	22	500 00	11,000 00	1.08	11,880 00	7	770 00
Jan. 17, 1878.	City and County of San Francisco (Dupont Street) Bonds—Mature January 1st, 1897. Interest payable semi-annually, on the 1st of January and July. Numbered 212, 213, 214, 215, and from 260 to 295, both inclusive.	40	1,000 00	40,000 00	90	36,000 00	7	2,800 00
Jan. 31, 1878.	City and County of San Francisco Slip Bonds (so-called)—Mature October 1st, 1883. Interest payable semi-annually, on the 1st of April and October. Numbered 1044 to 1050, both inclusive.	7	1,000 00	7,000 00	1.07½	7,325 50	7	490 00
March 5, 1878.	Also, Number 117 City and County of San Francisco Park Improvement Bonds—Mature January 1st, 1898. Interest payable on the 1st of January and July. Numbered 168, 170, 171, and from 177 to 185, both inclusive.	1	500 00	500 00	1.07½	537 60	7	35 00
May 14, 1878.	City and County of San Francisco Park Improvement Bonds—Numbered from 186 to 196, both inclusive.	12	1,000 00	12,000 00	Flat. 1.05	12,472 00	6	720 00
		11	1,000 00	11,000 00	1.04	11,440 00	6	660 00

Sept. 11, 1878--	School Bonds of the Town of Alameda, State of California—Bearing 6 per cent. per annum, interest payable semi-annually; issued under Act of March 28th, 1878. Date of maturity, September 4th, 1898. Numbered from 41 to 60, both inclusive.					
Feb. 10, 1879--	20	500 00	10,000 00	1.02½	10,203 00	6 600 00
May 21, 1879--	16	1,000 00	16,000 00	5 7⁄9 c. Flat.	16,709 34	6 960 00
	6	1,000 00	6,000 00	5½ 7⁄9 cent.		
	4	1,000 00	4,000 00	5½ 7⁄9 cent.	10,550 00	7 700 00
	145		\$133,500 00		\$123,316 84	\$8,095 00
	Totals-----					

INVESTMENT IN BONDS

For Account of the Brayton Real Estate Fund.

Date of Purchase	Description of Bonds.	Number of Bonds	Denomination of Bonds	Par Value of Bonds	Rate of Purchase	Amount Paid for Bonds	Rate of Interest—Per Cent.	Amount of Annual Interest
October 12, 1877	City and County of San Francisco—Funded Debt of 1858, maturing January 1st, 1888. Number of Bonds—630, 631, 632, 633, 634, 635, 636, 767, 768, 769, 770, 771, 775, and 973.	14	\$1,000 00	\$14,000 00	\$1.02	\$14,262 50	6	\$840 00
May 14, 1878	City and County of San Francisco (so-called Slip Bonds), maturing October 1st, 1883—Numbered from 108 to 116, both inclusive.	9	500 00	4,500 00	1.07½	4,837 50	7	315 00
February 10, 1879	City and County of San Francisco Park Improvements—Maturing January 1st, 1898, No. 197.	1	1,000 00	1,000 00	1.04	1,040 00	6	60 00
	City and County of San Francisco Park and Improvement Fund—Maturing January 1st, 1898, Nos. 215 to 224, both inclusive	10	1,000 00	10,000 00	5 Flat.	10,443 33	6	600 00
	Totals	34		\$29,500 00		\$30,583 33		\$1,815 00

THE UNIVERSITY MEDAL FUND.

Dr.	Deposited with the Union Savings Bank, Oakland, California.				Cr.
1874.			1873.		
July 30	To cash—Medal to Frank Otis	\$125 00	March 13	By donations	\$2,383 68
			June 30	By interest	56 05
Oct. 10	To cash—Medal to J. M. Whitworth	125 00	Dec. 31	By interest	121 48
			1874.		
Oct. 10	To cash—Medal to F. H. Whitworth	125 00	June 30	By interest	126 99
			Dec. 31	By interest	115 79
1875.			1875.		
July 16	To cash—Medal to T. F. Barry	125 00	June 30	By interest	114 41
			Dec. 31	By interest	114 86
1876.			1876.		
Nov. 30	To cash—Medal to D. B. Huntley	125 00	June 30	By interest	119 37
			1877.		
Nov. 30	To cash—Medal to F. L. Button	125 00	Jan. 31	By interest	115 13
			July 30	By interest	112 40
1878.		\$750 00	1878.		
June 30	To balance	2,736 62	Jan. 31	By interest	106 46
		\$3,486 62			\$3,486 62
1878.					
Oct. 31	To cash—Medal to Theodore Gray	\$125 00	June 30	By balance	\$2,736 62
			July 31	By interest	103 74
Oct. 31	To cash—Medal to Joseph Hutchinson	128 50	1879.		
			Jan. 31	By interest	98 59
1879.					
June 30	To balance	2,685 45			
		\$2,938 95			\$2,938 95
			1879.		
			June 30	By balance	\$2,685 45

THE AGASSIZ PROFESSORSHIP FUND.

Dr.		<i>Deposited with the Union Savings Bank, Oakland, California.</i>		Cr.	
1876.			1873.		
June 30	To balance	\$485 56	March 13	By cash from rent	\$100 00
			June 30	By interest	2 35
			Dec. 31	By interest	5 05
			1874.		
			June 30	By interest	6 08
			Aug. 19	By cash from rent	100 00
			Nov. 14	By cash from rent	100 00
			Dec. 31	By interest	9 27
			1875.		
			June 30	By interest	15 22
			Dec. 11	By cash from rent	125 00
			1876.		
			June 30	By interest	22 60
		<u>\$485 56</u>			<u>\$485 56</u>
			1876.		
			June 30	By balance	\$485 56
			Dec. 18	By rent	125 00
			1877.		
			June 30	By interest	68 53
1877.					
June 30	To balance	\$679 09	1877.		
			June 30	By balance	\$679 09
			1878.		
			Jan. 31	By interest	28 64
			March 31	By rent	125 00
1878.					
June 30	To balance	\$832 73	June 30		<u>\$832 73</u>
			June 30	By balance	\$832 73
			July 31	By interest	30 60
			1879.		
			Jan. 31	By interest	32 57
			May 31	By rent	125 00
1879.					
June 30	To balance	\$1,020 90	1879.		<u>\$1,020 90</u>
			June 30	By balance	\$1,020 90

REPORT OF THE LAND AGENT OF THE UNIVERSITY OF CALIFORNIA.

LAND OFFICE OF THE UNIVERSITY,)
 SAN FRANCISCO, June 30th, 1879.)

To the Honorable the Board of Regents of the University of California:

GENTLEMEN: The transactions of the Land Department of the University of California, from July 1st, 1877, to June 30th, 1879, also statements of the total cash sales of the grant, deferred payments due, and number of acres located, is herewith respectfully submitted.

Receipts.

From sales of the agricultural grant of 150,000 acres	\$107,136 00
From collections of \$1 25 per acre due the United States for double minimum lands	5,148 37
From interest on deferred payments due agricultural grant	17,338 62
From fees for applications, certificates of purchase, and patents	938 00
From interest on deferred payments due forfeited seminary lands	192 00
From State tax due the State of California for affixing the seal of State to patents	74 00
From fees and costs of suits repaid	317 45
	<hr/>
	\$131,144 44
Number of acres for which certificates of purchase have been issued	5,680.99
Number of acres for which patents have been issued for minimum lands	7,384.24
Number of acres for which patents have been issued for double minimum lands	7,868.42
	<hr/>
	20,933.65

Total delinquencies of payments.

On approvals	\$32,979 82
Delinquent interest on certificates of purchase	27,558 42
	<hr/>
	\$60,538 24

Total sales of the agricultural grant of 150,000 acres from April 19th, 1869, to June 30th, 1879, both inclusive.

	Number of Acres.	Amount Paid.
Sales of land at \$5 00 per acre, payment in full	27,106.11	\$135,531 05
Sales of land at \$5 00 per acre, 20 per cent. of principal paid	27,515.38	27,515 38
Sales of land at \$5 00 per acre, 40 per cent. of principal paid	5,441.38	11,082 76
Sales of land at \$5 00 per acre, 60 per cent. of principal paid	2,720.00	8,160 00
Sales of land at \$5 00 per acre, 80 per cent. of principal paid	10,975.10	43,900 40
Sales of land at \$10 00 per acre, less \$1 25 per acre due United States, payment in full	160.00	1,400 00
Sales of land at \$6 25 per acre, less \$1 25 per acre due United States, payment in full	22,603.47	113,023 98
Sales of land at \$6 25 per acre, less \$1 25 per acre due United States, 20 per cent. of principal paid	35,632.53	35,632 53
Sales of land at \$6 25 per acre, less \$1 25 per acre due United States, 40 per cent. of principal paid	360.00	720 00
Sales of land at \$6 25 per acre, less \$1 25 per acre, due United States, 60 per cent. of principal paid	120.00	360 00
Add forfeiture of deposit of \$1 00 per acre on 200 acres		200 00
	<hr/>	<hr/>
Total amount to credit of Land Fund, June 30th, 1879	132,733.97	\$377,526 10

Statement of unpaid balances of principal due on above sales.

	Amount of Principal.	Annual Interest.
Balance due on lands sold at \$5 00 per acre, bearing 10 per cent, per annum interest.....	\$129,356 62	\$12,935 66
Balance due on lands sold at \$5 00 per acre, new contract, at 8 per cent, per annum interest.....	13,744 14	1,099 53
Balance due on lands sold at \$6 25 per acre, bearing 10 per cent, per annum interest.....	142,890 12	14,289 01
Balance due on lands sold at \$6 25 per acre, new contract, at 8 per cent, per annum interest.....	960 00	76 80
	<u>\$286,950 88</u>	<u>\$28,401 00</u>

Statement of land listed and charged against the agricultural grant of 150,000 acres.

San Francisco District.....	47,159.27 acres.	Marysville District.....	22,074.27 acres.
Sacramento District.....	4,256.14 acres.	Susanville District.....	1,257.53 acres.
Los Angeles District.....	7,463.68 acres.	Aurora District.....	1,920.65 acres.
Stockton District.....	9,330.30 acres.	Independence District.....	1,360.00 acres.
Humboldt District.....	13,707.38 acres.		
Shasta District.....	18,017.25 acres.	Total acres listed.....	140,275.96 acres.
Visalia District.....	13,729.49 acres.		

NOTE.—The total number of acres listed will be somewhat reduced after correction of errors by the United States General Land Office.

Your attention is called to the following statement made from a recent report from the State Surveyor-General's Office, in relation to seminary and public building land delinquencies.

Names of Applicants.	Seminary Land Fund.		Delinquent Interest.
	Date When Due.	Amount Due.	
John Kegg.....	January 1, 1864..	\$160 00	\$256 00
Samuel Musgrave.....	January 1, 1864..	160 00	208 00
Rufus Johnson.....	January 1, 1864..	160 00	208 00
James Fernandez.....	January 1, 1864..	160 00	208 00
Willard Stone.....	January 1, 1865..	160 00	192 00
Benjamin Bryant.....	January 1, 1865..	80 00	24 00
		<u>\$880 00</u>	<u>\$1,096 00</u>

Name of Applicant.	Public Building Land Fund.		Delinquent Interest.
	Date When Due.	Amount Due.	
Martin Baker.....	January 1, 1874..	\$320 00	\$224 00

The above statement shows a total of delinquent land principal of \$1,200, and interest of \$1,320, that should have been paid into the State Register's Office. In my report to the Finance Committee, under date of December 1st, 1876, which was by said committee submitted to your honorable Board, I called attention to these delinquencies, stating: "Although delinquent lists have been made out and sent to District Attorneys, no action seems to have been taken. Thus over 1,500 acres are withheld from the Land Department of the University for reentry and sale; and to-day these lands stand upon the Register in the names of the original applicants. It will require action on the part of the Regents to secure from the several District Attorneys the faithful discharge of their duties in the energetic prosecution of all delinquent applicants." (See page 2 of printed report.)

Very respectfully,

J. HAM HARRIS,
Land Agent of the University of California.

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City





